RDF-B1/
RDF-B1 EDITOR

SERVICE
MANUAL

REVISION 0 JULY 1991

Canon
FY8-13BH-000

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CANON RDF-B1/RDF-B1 EDITOR REV.0 JULY 1991 PRINTED IN JAPAN

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I. FEATURES

1. Accommodates two-sided documents.

- In addition to the automatic document feeding (ADF) mechanism, the machine is equipped with a reversing mechanism to handle two-sided documents.

2. Feeds documents in cycle.

- The machine uses the same tray for pick-up and delivery so that it can feed and deliver documents automatically without operator intervention.

3. Identifies document size.

- When documents are set in the RDF-B1 document tray, the machine automatically identifies the size of the documents and sends the data to the copier.

4. Handles A5/STMT-size documents.

5. Equipped with a DC motor.

- The machine uses a DC motor, thereby eliminating the need to distinguish models by frequency.

6. Has mixed size mode.

- The machine allows the use of documents of different sizes*.

*Of metric or of inch at a time.

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II. SPECIFICATIONS

Item	Specifications	Remarks
Pick-up	Automatic	
Type of document	Sheet (50 to 105 g/m2); one-sided sheet, two-sided sheet	See Note.
Size of document	A5 (STMT) to A3 (11" x 17") 139.7 to 432 mm long (feeding direction) 182 to 297 mm wide	
Placement of documents	Face up	First page on top, if stack.
Modes	One-sided document to One-sided copy Two-sided document to One-sided copies	For two-sided copying, as per copier
Document tray	5 mm thick max. (small size; about 50 sheets of 80 g/m2)	A5, B5R, A4, A4R, B5 LTR, LTR-R, STMT
	2 mm thick max. (large size; about 25 sheets of 80 g/m2)	A3, B4, 11" x 17", LGL
Pick-up/Delivery tray	50 sheets (small size), 25 sheets (large size) of 80 g/m2	
Mixed size mode	A4/A3, B5/B4, LTR/11" x 17", LTR-R/LGL, A4-R/A5, LTR/STMT	
Document size identification	Available (feeding direction only)	
Control panel	Available (MIX SIZE mode switch)	
Handling speed	150 mm/sec (pick-up) 800 mm/sec (feeding) 800 to 150 mm/sec (delivery)	
Processing speed	0.5 sec or less (A4, one-sided) 2.5 sec or less (A4, two-sided)	Document replacement in continuous mode.
Power supply	24 VDC (from copier)	
Power consumption	150 W	
Weight	12kg (w/o Editor), 14kg (w/ Editor)	
Dimensions (mm)	616 (W) x 513 (D) x 149 (H)	
Operating conditions Temperature Humidity	As per copier	

Note:

Avoid any of the following types:
- OHP or clear documents with an opacity of 80% or less.
- Sheets with binding holes.
- Sheets with curl or bend.
- Sheets with staples or clips.
- Sheets worked by cut-and-paste.
- Sheets with carbon back.

Limit cycling each document to less than 30 times to avoid damage.

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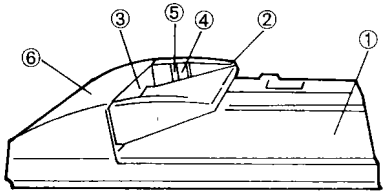
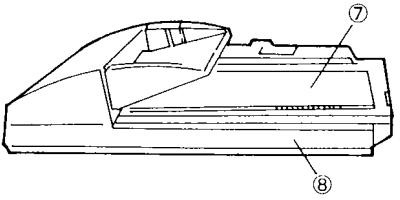
III. NAMES OF PARTS

A. Outside View



① Body cover
② Document tray
③ Side guide unit
④ DOCUMENT SET indicator
⑤ Recycle lever
⑥ Upper cover
⑧ Recycle lever

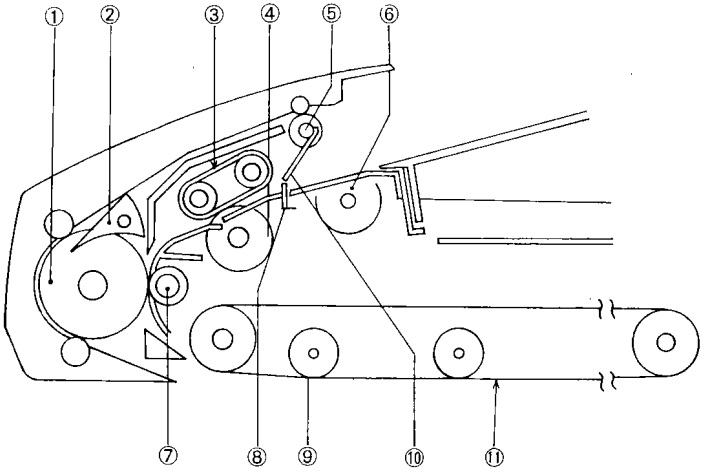
Figure 1-1a



⑦ Editor
⑧ Recycle lever

Figure 1-1b

B. Cross Section



① Delivery/Reversing roller
② Paper deflector
③ Separation belt
④ Feeder roller
⑤ Delivery roller
⑥ Pick-up roller
⑦ Registration roller
⑧ Stopper plate
⑨ Holding roller
⑩ Retainer plate
⑪ Feeder belt

Figure 1-2

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IV. OPERATION

A. DOCUMENT SET Indicator

The DOCUMENT SET indicator remains ON while documents are set on the document tray and flashes in response to a jam; see Figure 1-3.

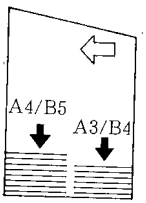

Figure 1-3

Sequence of Operation

1) Extend the document sub tray if the documents are B5 or larger and A5/STMT.
2) Set the side guide to suit the document size.
3) Set the documents on the document tray with the first page on top.
4) Set the copy mode on the copier.
5) Press the COPY START key on the copier.

B. Warnings and Corrections

Suspect a jam if the DOCUMENT SET indicator flashes while documents are being fed, and go through the following to correct the problem.

1) Remove the documents from the document tray.
2) Open the RDF upper cover; if a jam is found, remove the jam, and open the RDF to clear the warning. If any, remove the documents from the copyboard as well.

Note:

Do not open the RDF if the jam is in the copier; the jam recovery mode will automatically sef the documents.

3) Collate the documents with the first page on top, and set them back on the RDF.

C. Routine Work by the User

Advise the user to clean the following at least once a week.

1. Copyboard Glass

Wipe it using a cloth moistened with water; or, wipe it using alcohol, and then dry wipe it.

2. Feeder Belt

Wipe it using water or alcohol.

3. RDF Components

Wipe any soiled components using mild detergent solution.

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I. BASIC CONSTRUCTION

A. Electrical Circuitry

The RDF controller PCB controls the machine's all electrical functions. The RDF controller PCB is a microprocessor which receives signals from the sensors and sends signals to drive the DC motor, solenoids, LEDs, and other loads according to pre-programmed instructions.

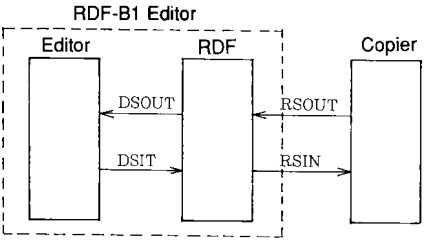

Figure 2-2

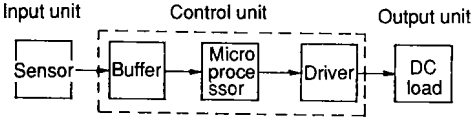

Figure 2-1

Figure 2-1 is a block diagram showing the basic flow of signals. The buffer prevents malfunction of the microprocessor otherwise caused by electrical noises from external sources and converts the voltage of input signals from sensors. The drive, on the other hand, amplifies the output signals of the microprocessor used to drive the loads.

The copy mode selected on the copier is communicated to the machine (RDF) in the form of signals. The machine, in turn, communicates its condition to the copier by signals.

These signals are sent in serial using two cables (IPC) as shown in Figure 2-2.

An error in the transfer of signals activates the copier's self diagnostic mechanism and, as a result, 'E400' will be indicated on its display.

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Figure 2-3 is a block diagram depicting the relationship between the machine's major circuits and the copier.

The machine is supplied with power by the copier, and the power is divided into 24 VDC and 5 VDC on the RDF controller PCB before it is sent to each circuit.

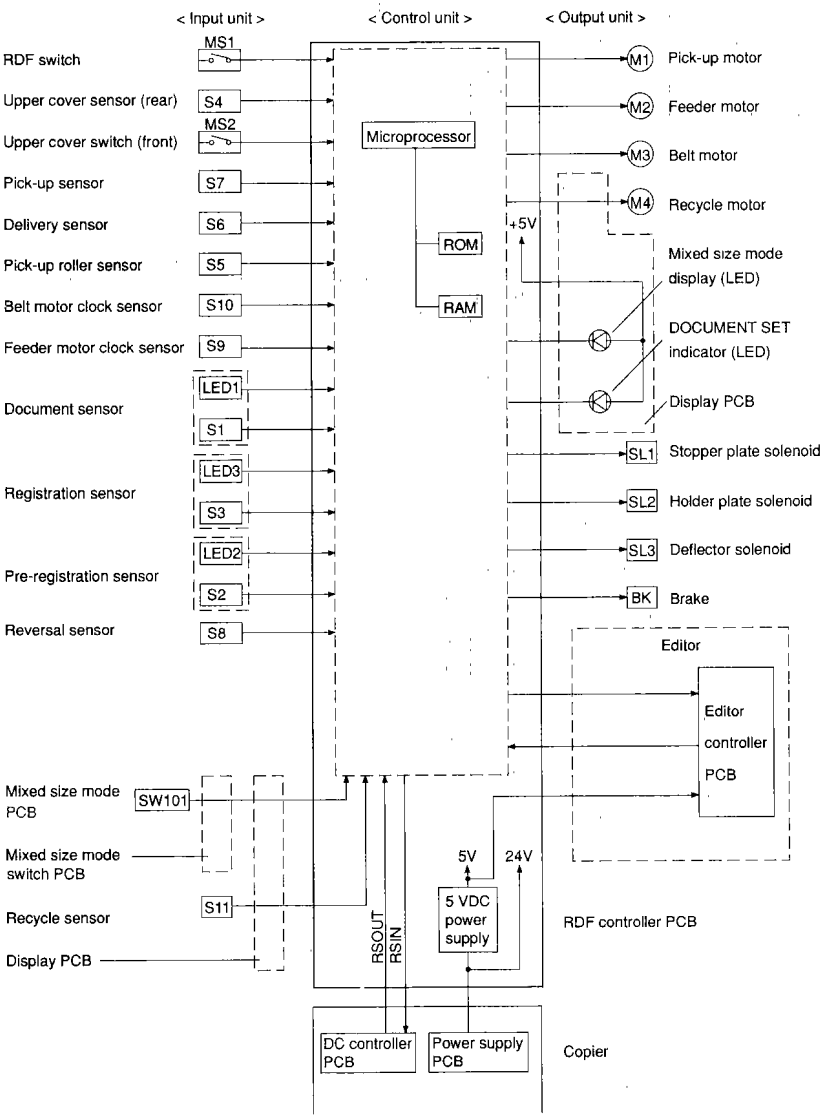

Figure 2-3 Electrical circuit of RDF

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B. Inputs to RDF Controller PCB (1/3)

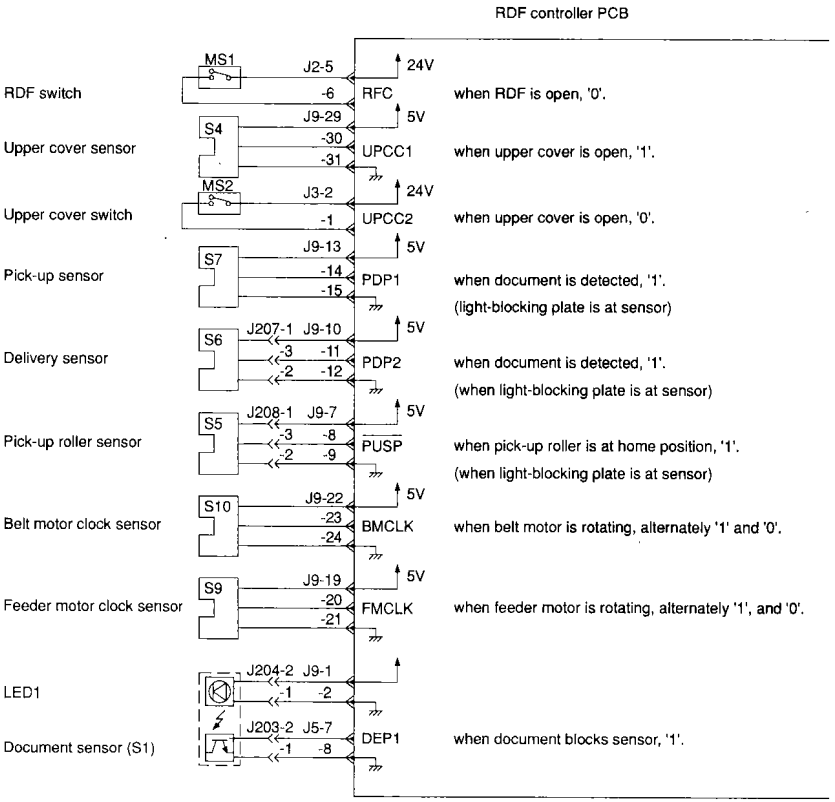

Figure 2-4

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C. Inputs to RDF Controller PCB (2/3)

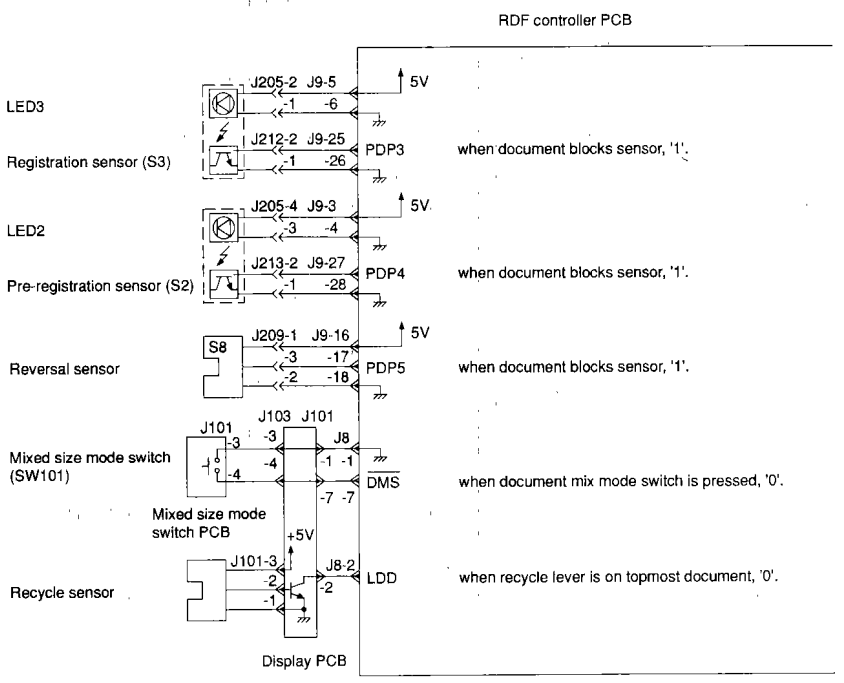

Figure 2-5

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D. Inputs to RDF Controller PCB (3/3)

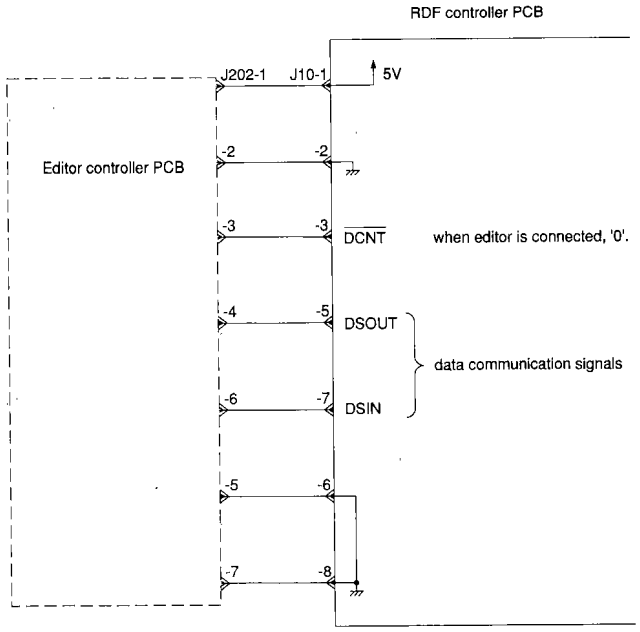

Figure 2-5a

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E. Outputs from RDF Controller PCB

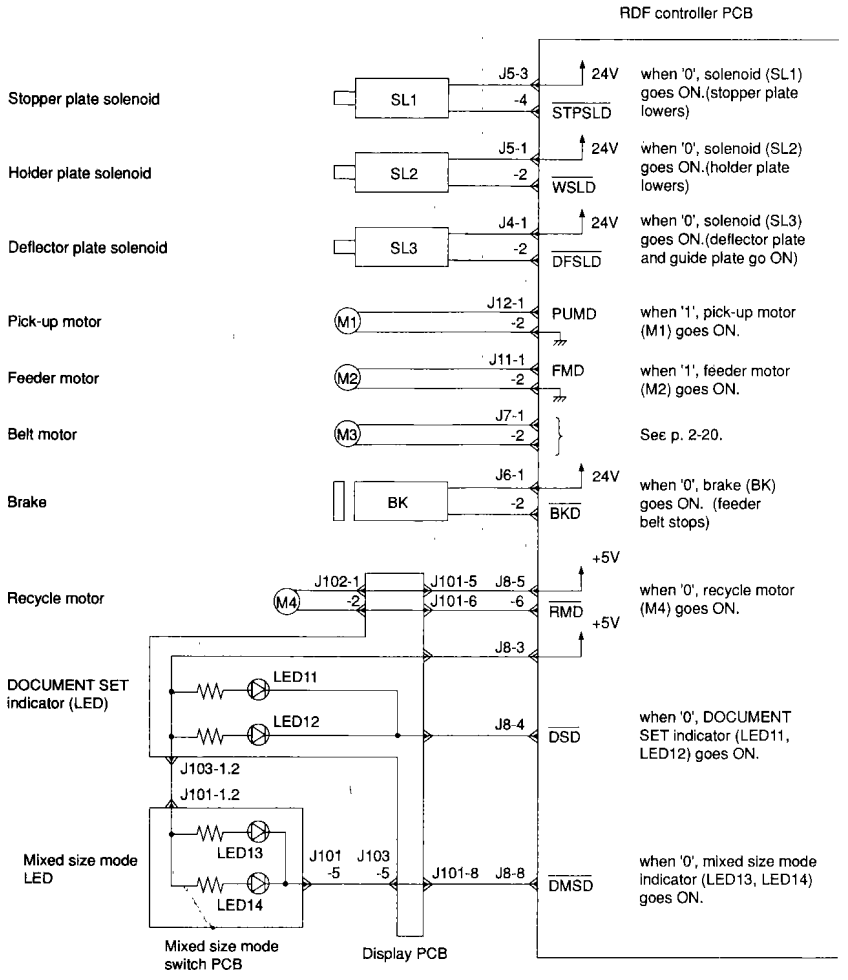

Figure 2-6

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II. BASIC OPERATION

A. Outline

Documents are picked up, fed, and delivered using three motors.

The pick-up motor (M1) picks up documents, and the feeder motor (M2) reverses and delivers them; the belt motor (M3) feeds documents to the copyboard glass and delivers them.

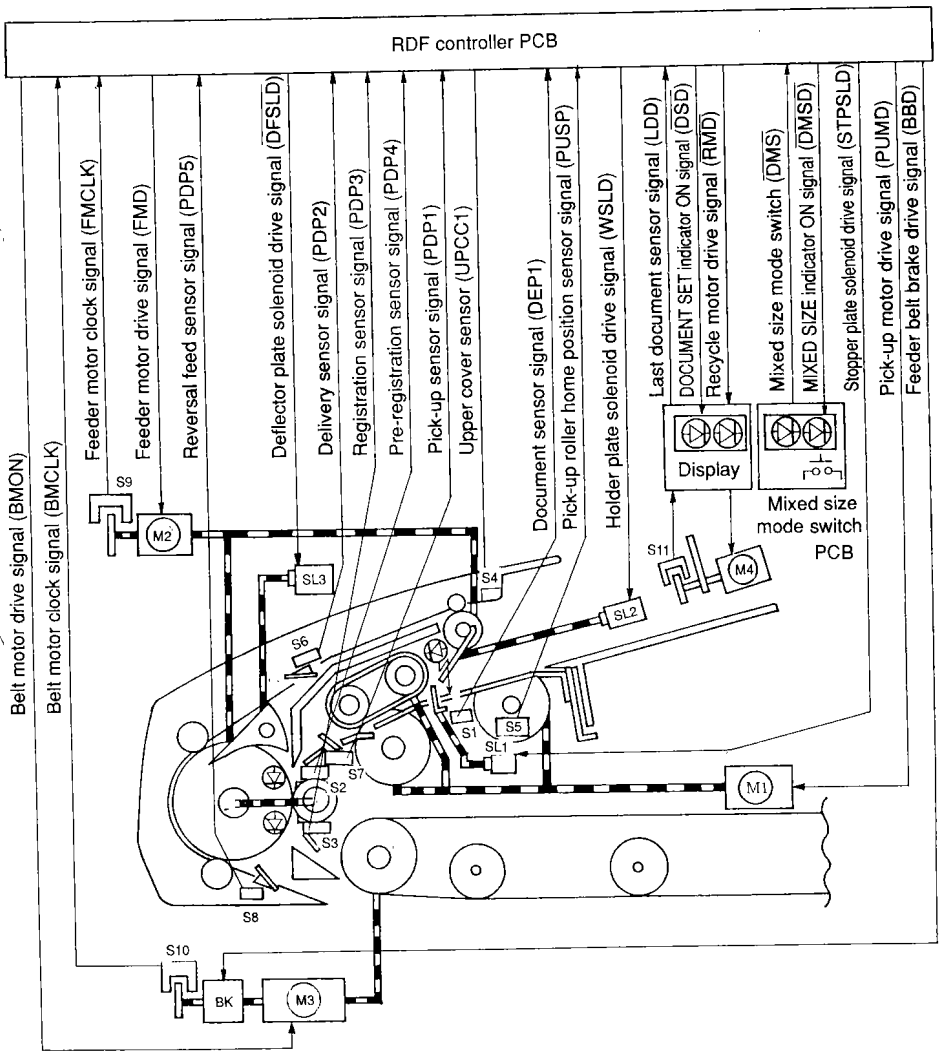

Figure 2-7

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The machine is controlled from the copier for the following modes:

a. one-sided document to one-sided copy
b. two-sided document to one-sided copies
c. one-sided documents to two-sided copy*
d. two-sided document to two-sided copy*
*With the duplexing unit in use.

The selected mode is communicated to the RDF by signals.

The RDF, in response to instructions from the copier, executes two types of operation.

1. One-Sided Document Mode

The documents are picked up in succession from the document tray starting with the bottom (last) page and placed on the copy board glass.

When one side of the document has been copied, the document is moved from the copyboard glass and delivered to the document tray.

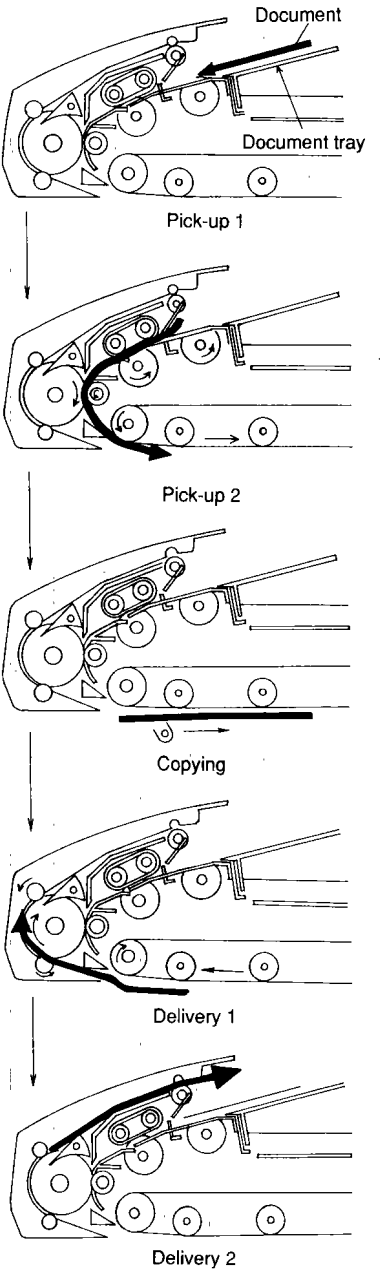

Figure 2-8 One-Sided Document Mode

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2. Two-Sided Document Mode

When copying both the face (1st side) and the back (2nd side) of a document, the document is reversed automatically.

3. Recycly Mode

If the copier is not equipped with a sorter, the Recycle mode may be used to sort the copies. In this mode, documents are copied one after another to produce a single set of copies; the operation is then repeated to produce specified sets of copies.

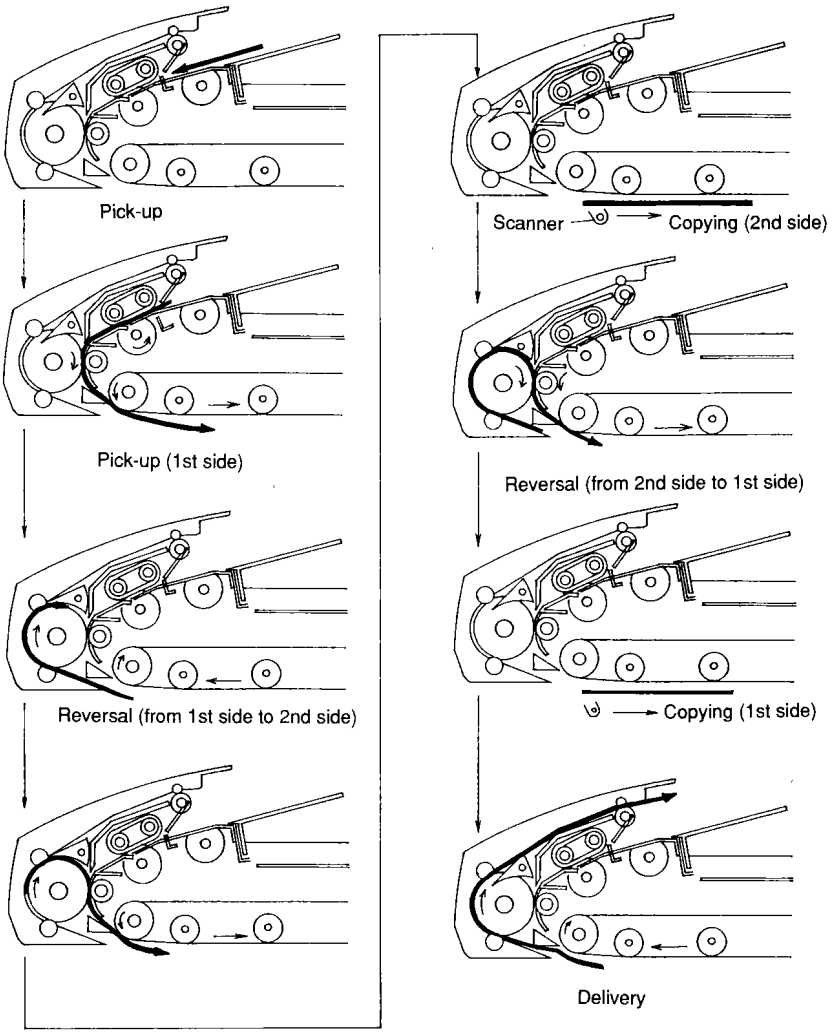

Figure 2-9 Two-Sided Document Mode

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B. Identifying the Document Type

1. Outline

The machine identifies the document as to the following three criteria:

① Presence/absence of documents on the document tray.
② Size of the documents set on the document tray.
③ Number of documents to make sure that all documents on the tray have been copied.

2. Presence/Absence of Documents

The presence/absence of documents on the document tray is checked by the document sensor (S1).

When a document is placed on the document tray, the light from LED1 is blocked, causing the document sensor (S1) to generate the document sensor signal (DEP1).

The DOCUMENT SET indicator (LED1, LED2) goes ON in response to this detection.

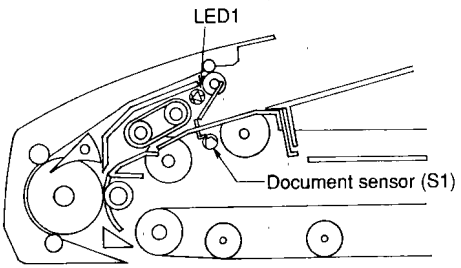

Figure 2-10

3. Identifying the Document Size

The measurements (feeding direction) of documents are taken while they are moving past the pre-registration sensor (S2) and the registration sensor (S3).

Based on these measurements, the documents are identified as being A5, B5R, STMT, A3, A4, B5, B4, A4R, LGL, LTR, LTR-R, or 11"X17".

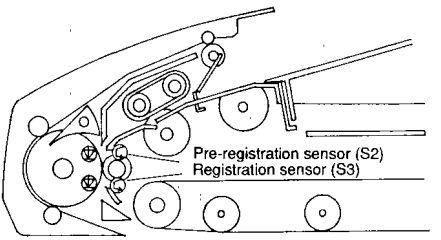

Figure 2-11

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Standard size	Length of document
A5	less than 165 mm
B5	166 to 196 mm
A4	197 to 233 mm
B5R	234 to 277 mm
A4R	278 to 313 mm
FOOLSCAP	314 to 347 mm
B4	348 to 376 mm
Computer form	378 to 400 mm
A3	more than401mm

Table 2-1

4. Identifying the Number of Documents

There is no need to identify the number of documents in the 'one-sided document to one-sided copy', 'two-sided document to one-sided copies', or 'two-sided document to two-sided copy' mode; copies are made of the documents in sequence.

In the 'one-sided documents to two-sided copy mode, however, it is important that the number of documents be identified as to odd or even.

For this reason, the documents are first picked up and delivered without copying to allow the registration sensor (S3) to take count of the documents.

Note:

The machine will pick up the last page of the documents first for copying, and it must decide whether the last page should be copied on the face or the back of copy paper.

If an odd number of documents are fed without restriction as in Figure 2-12, the first page of the documents will be copied on the back of copy paper.

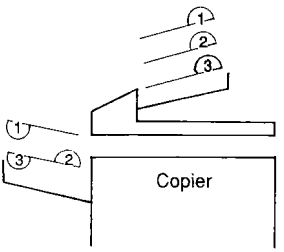

Figure 2-12

The machine uses the same tray for pick-up and delivery; this means it must distinguish between documents that have been copied and those waiting to be copied.

This distinction is made by the recycle bar placed on the topmost page of the documents. As soon as the last page is picked up, the bar is designed to drop through the tray, thereby allowing the recycle sensor (S11) to detect the pick-up of the last page and generate the recycle sensor signal (LDD).

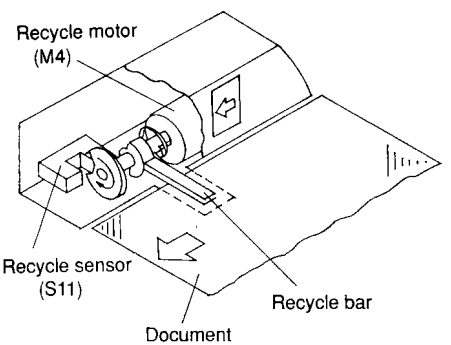

Figure 2-13

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C. Pick-Up

1. Mechanism

When the COPY START key is pressed with documents on the document tray, the documents will be picked up in the following sequence:

① Vibrating

The pick-up motor (M1) goes ON to rotate the pick-up roller; at the same time, the documents are vibrated to facilitate pick-up.

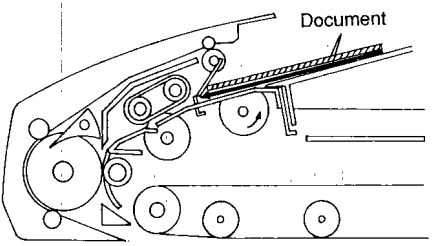

Figure 2-14

② Separating

The stopper plate and the holder plate are lowered to pick-up a document* ; thereafter, the document is fed between the separation belt and the feeder roller to prevent double feeding.

*See below.

Note:

The holder plate is always lowered when the first page is picked up. It, however, will not be lowered for subsequent pages if the pick-up sensor (S7) detects the document within 800 ms after the pick-up motor has gone ON. If the document is not detected within 800 ms, the holder plate is lowered to facilitate feeding.

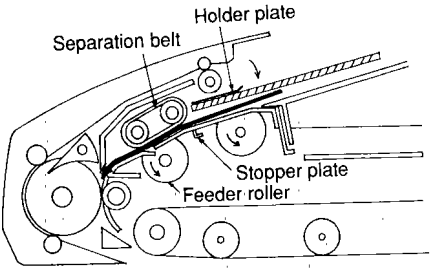

Figure 2-15

③ Arcing

The document is butted against the registration roller to form an arc.

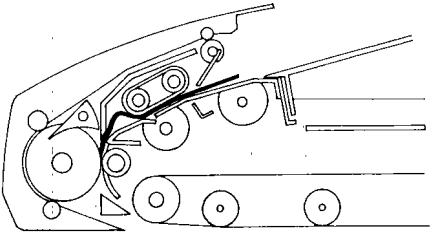

Figure 2-16

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④ Feeding

The feeder belt, registration roller, and feeder roller are rotated to forward the document.

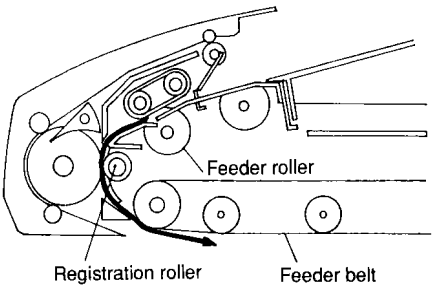

Figure 2-17

⑤ Moving the Scanner Forward and Picking Up the Second Page

The scanner starts to move forward as soon as the document reaches a specific position on the copyboard glass. At the same time, if the documents are of a small size, the second page is picked up.

If the documents are of a large size, the second page is picked up after the first page has been delivered.

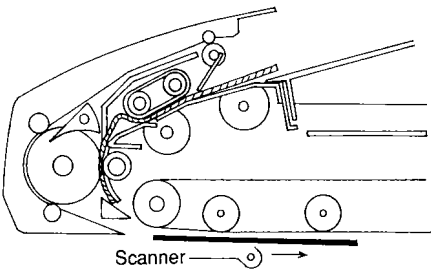

Figure 2-18

Note:

If the documents are of a small size, the second and subspguent documents are carried ahead of the registration roller for faster feeding.

2. Sequence of Operation (A4, 2 pages)

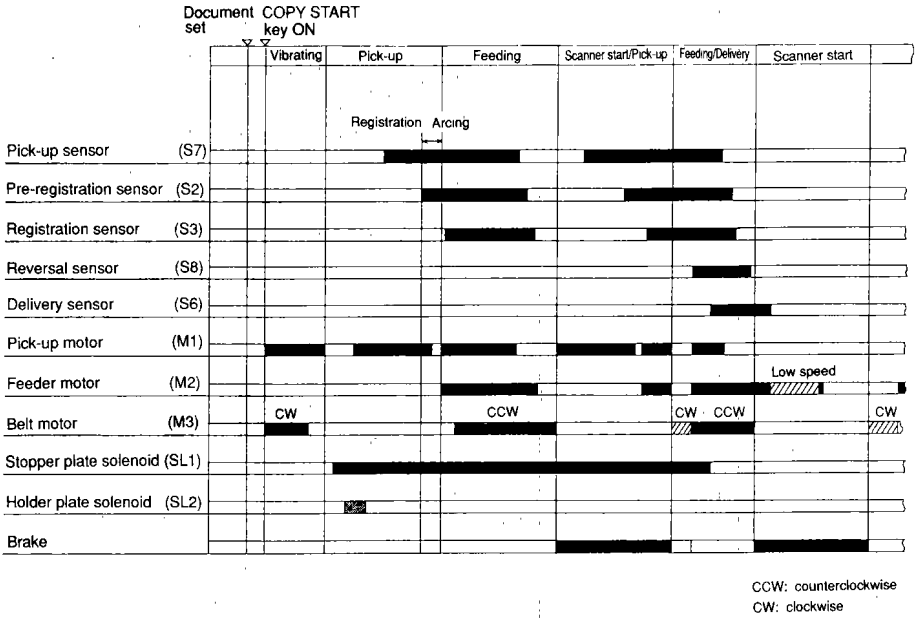

Figure 2-19

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D. Delivery

1. Mechanism

The document on the copyboard glass is delivered to the document tray in the following sequence:

① By Feeder Belt

The feeder belt is moved in clockwise direction to forward and deliver the document from the copyboard glass.

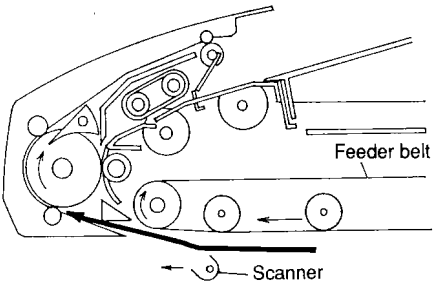

Figure 2-20

② By Delivery/Reversing Roller

The document delivered by the feeder belt is fed between the reversing roller and the feeder roller; at the same time, the second page is picked up once again.

When the leading edge of the document has moved away from the reversing sensor (S8) about 60 mm, the feeder belt moves counterclockwise in preparation for the next pick-up.

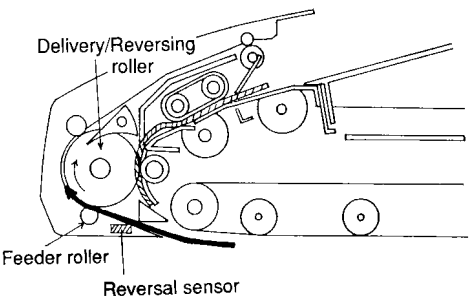

Figure 2-21

③ Switching between Delivery and Reversal

The deflector plate solenoid (SL3) remains OFF and, therefore, the deflector plate remains closed. In this condition, the document is fed toward the document tray.

The document after pick-up is sent to the copyboard glass.

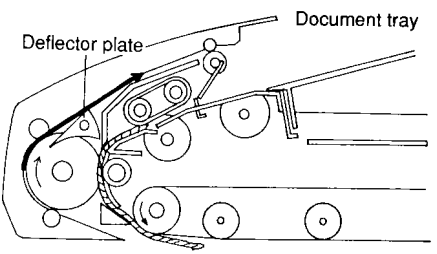

Figure 2-22

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④ To Document Tray

The feeder motor is switched to low speed while the trailing edge of the document is being delivered to the document tray.

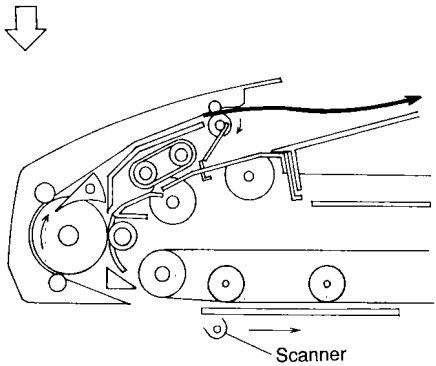
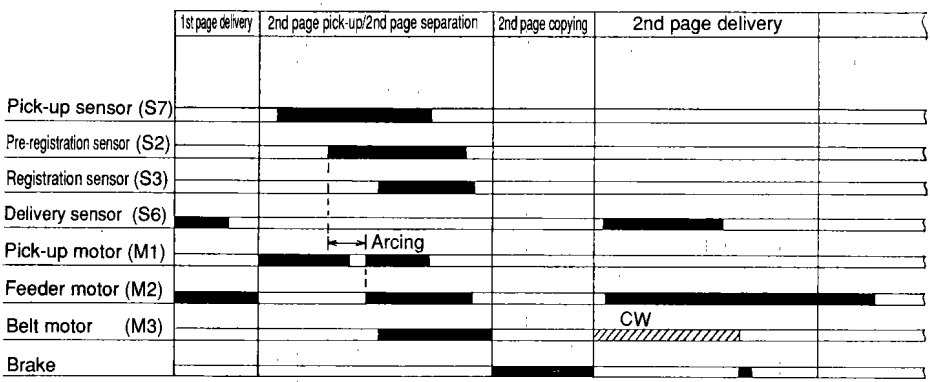


Figure 2-23

2. Sequence of Operation (large size/mixed mode; 2 copies)



CW: clock wise

Figure 2-24

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3. Sequence of Operation (small size; continuous)

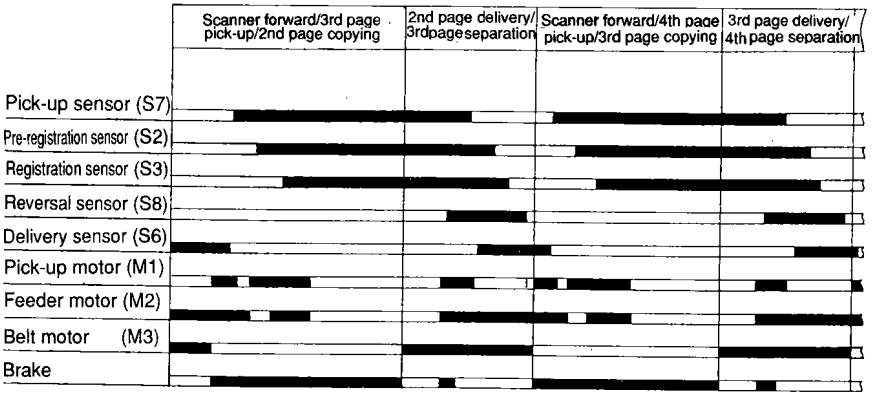

Figure 2-25

4. Sequence of Operation (small size)

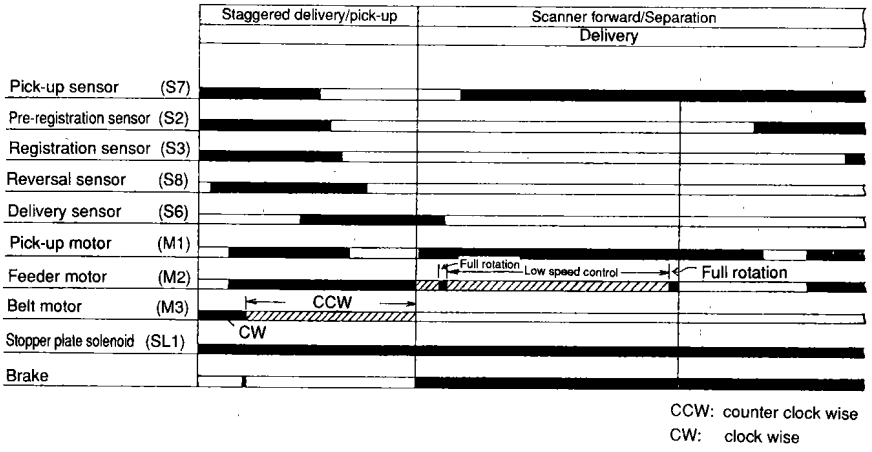

Figure 2-26

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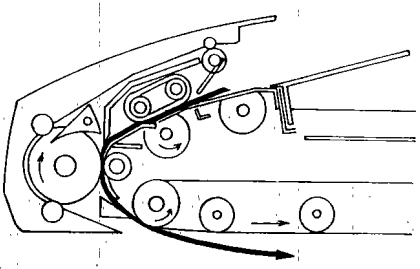
E. Reversing

1. Mechanism

Documents are reversed from first side to second side or from second side to first side. Since both are identical in terms of the mechanisms used, the following discussions will be limited to reversal from first side to second side.

① Picking Up the First Side

A document is moved from the document tray to the copyboard glass.

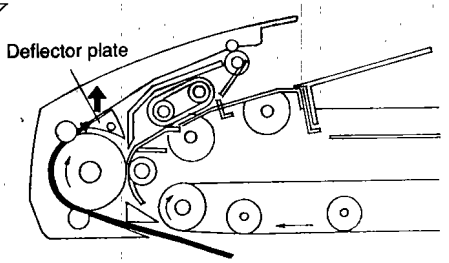


1st side pick-up

Figure 2-27

② Reversing/Feeding

The feeder belt is moved clockwise to reverse and feed the document on the copyboard glass.



Reversing from 1st side to 2nd side

Figure 2-28

③ Switching between Reversal and Delivery

The deflector plate solenoid (SL3) goes ON to open the deflector plate, thereby moving the document to the copyboard glass once again; by this time, the document has been reversed.

The scanner starts to move forward when the second side is set on the copyboard glass.

While the scanner is moving in reverse, the document is reversed again to set its first side on the copyboard glass.

The document is delivered when its first side has been copied.

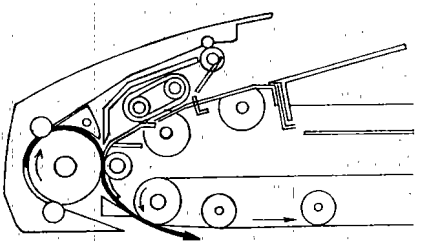


Figure 2-29

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2. Sequence of Operation (reversal)

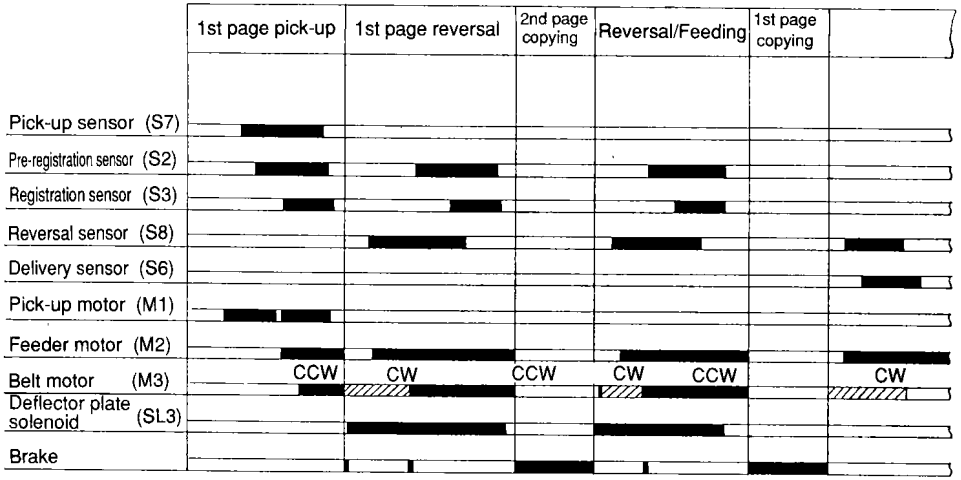

Figure 2-30

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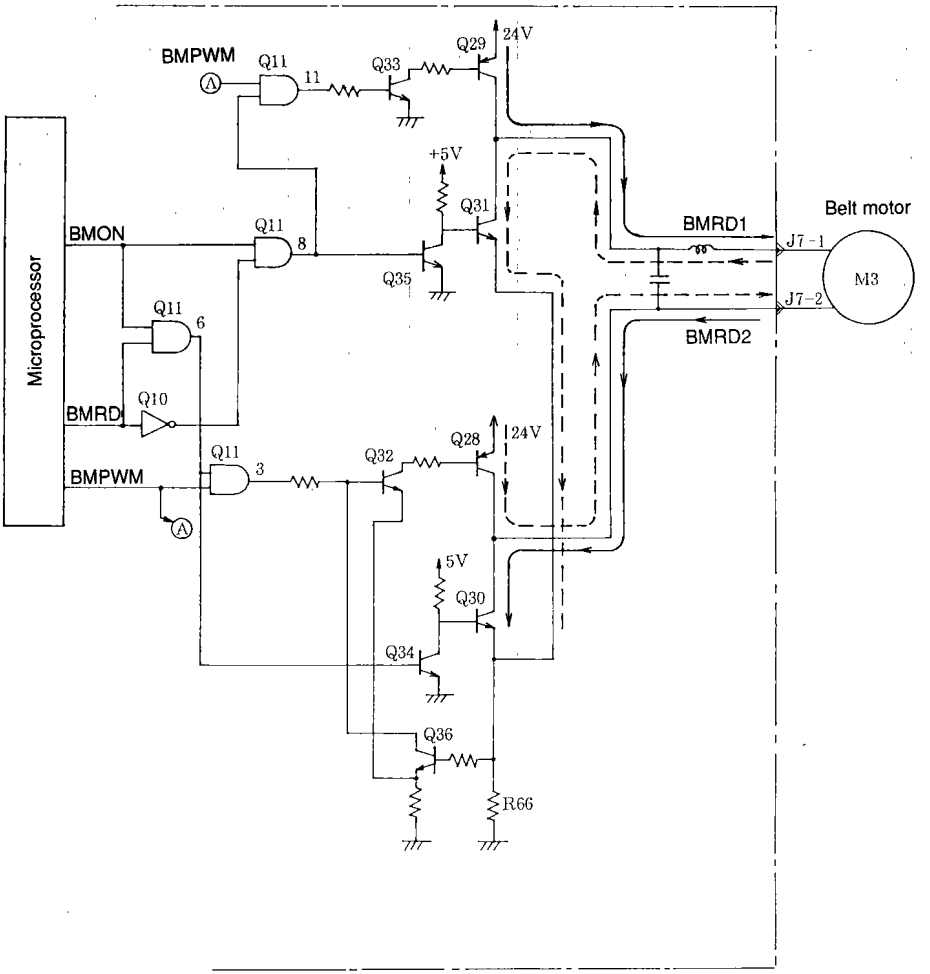
F. Controlling the Belt Motor

1. Outline

The belt motor (M3) is controlled by the microprocessor on the RF controller.



Belt motor counterclockwise rotation (pick-up) ----→

Belt motor clockwise rotation (delivery) ——→

Figure 2-31

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a. Relationship between Belt Motor Drive Signal (BMON), Belt Motor Direction Signal (BMRD), Belt Motor Pulse Signal (BMPWM), and Feeder Belt

Belt motor drive signal (BMON)	Belt motor direction signal (BMRD)	Belt motor pulse signal (BMPWM)	Transistor				Description
			Q29	Q31	Q28	Q30	
'1'	'1'	Pulse	OFF	ON	ON	OFF	The feeder belt is moved counterclockwise (paper feed direction).
'1'	'1'	'0'	OFF	ON	OFF	OFF	The feeder belt is moved counterclockwise (paper feed direction).
'1'	'0'	Pulse	ON	OFF	OFF	ON	The feeder belt is moved clockwise (paper delivery direction).
'1'	'0'	'0'	OFF	OFF	OFF	ON	The feeder belt is moved clockwise (paper delivery direction).
'0'	'1'/'0'	'1'/'0'	OFF	ON	OFF	ON	The feeder belt is stopped.

Table 2-2

b. Protecting the Belt Motor against Overcurrent
Some types and conditions of paper used for documents tend to cause overcurrent to flow into the belt motor. To prevent overloading the power supply circuit because of such overcurrent, the machine is equipped with an overcurrent control circuit.

Overcurrent is occured.
↳ Q36 goes ON.
↳ Q32 goes OFF.
↳ Q28 goes OFF.

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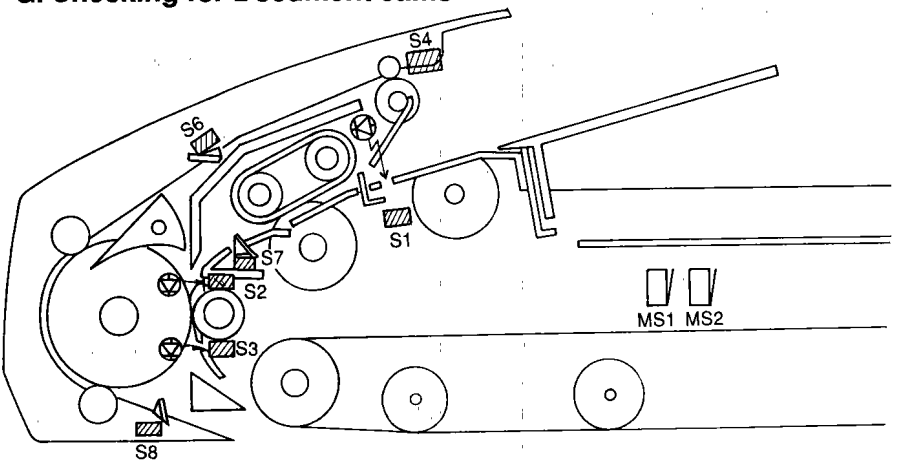
G. Checking for Document Jams



S7: Pick-up sensor
S6: Delivery sensor
S1: Document sensor
S3: Registration sensor
S2: Pre-registration sensor
S8: Reversal sensor
S4: Upper cover sensor
MS1: RDF switch
MS2: Upper cover switch

Figure 2-32

The microprocessor on the RDF controller PCB is programmed to issue instructions to check for document jams; jams are identified with reference to the presence/absence of a document over respective sensors

Table 2-3 gives conditions by which the microprocessor identifies document jams.

	Type of jam	Sensor	Description
Pick-up	Forced removal	S1, S7	S7 does not detect the leading edge of the document and, in addition, S1 does not detect the document 1500 ms after the pick-up motor (M1) has gone ON *.
	Pick-up delay	S7	S7 does not detect the leading edge of the document 1500 ms after the pick-up motor (M1) has gone ON *.
	Registration delay	S3, S7	S3 does not detect the leading edge of the document 350 ms after S7 has detected the leading edge of the document *.

Table 2-3a

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	Type of jam	Sensor	Description
Pick-up	Registration stationary	S3	S7 or S2 does not go OFF after the document has moved 1500 mm (or 800 ms). S3 does not go OFF 75 ms after S2 has gone OFF.
	Double feeding	S3	S3 remains ON after the 1st document is set on the copyboard.
Reversal	Reversal delay 1	S8	At time of document reversal and delivery, S8 does not detect the leading edge of the document 140 mm (or 225 ms) after the belt motor (M3) has started to rotate clockwise.
	Reversal stationary	S8	At time of document reversal and delivery, S8 does not detect the trailing edge of the document after a check on a reversal delay.
	Reversal delay 2	S8	At time of document delivery and pick-up, S8 does not detect the preceding document 50 mm after the belt motor has started to rotate counterclockwise; this may be brought about if the delivery document is moved to the copyboard glass together with the pick-up document.
	Paper present	S8	At time of document reversal, S8 remains ON.
	Reversal pick-up delay	S3	At time of document reversal, S2 does not detect the leading edge of the reversed document 100 mm (or 300 ms) after S8 has detected the leading edge of the document.
	Reversal pick-up stationary	S3	S3 does not detect the trailing edge of the document a period equivalent to 'document size + 180 mm' after S8 has gone ON.
Delivery	Delivery delay	S6	At time of delivery, S6 does not detect the leading edge of the document 100 mm (or 250 ms) after S8 has detected the leading edge of the document.
	Delivery stationary	S6	S6 does not detect the trailing edge of the document 100 mm (or 250 ms) after a check on reversal stationary.
	RF open	MS1	While the RDF is ON, the RDF is opened.
	Upper cover open	MS2, S4	While the RDF is ON, the upper cover is opened.
	Document circulation	S1	S1 does not detect the document delivered to the document tray.
	Jam present	S6, S3, S2, S8, S7	At time of pick-up, S6, S3, S2, or S8 is ON; or S7 if the stopper plate is up.

Table 2-3b

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1. Jam and Operation

The RF is stopped immediately in response to any of the jams given in Table 2-3.

2. Jam and Resetting

If it is a pick-up delay jam, the machine may be reset by removing the documents from the document tray. For other jams, the machine may be reset by removing the documents from the document tray, removing the jam from the inside of the machine, and opening and closing the machine.

*Identified as "improper document placement" if it is the first page; for all subsequent pages, the condition is identified as a jam.

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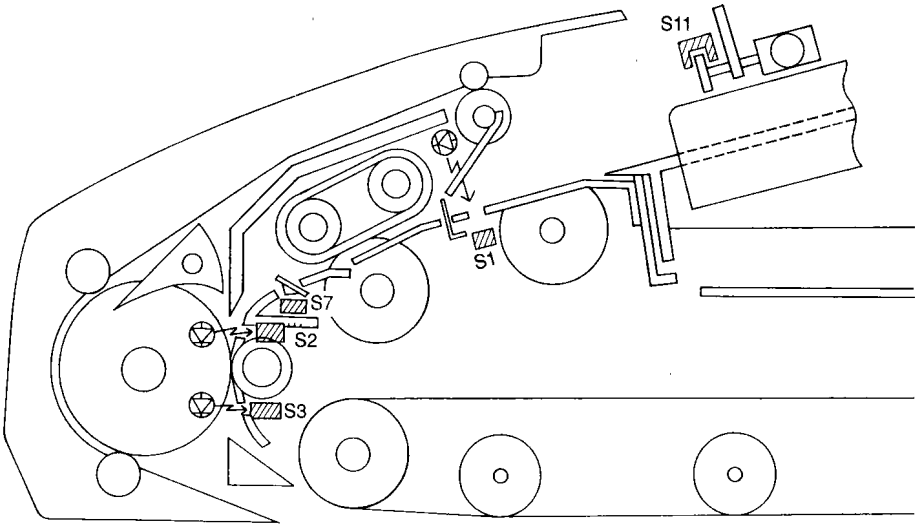
H. Improper Placement of Documents



S7: Pick-up sensor
S1: Document sensor
S3: Registration sensor
S2: Pre-registration sensor
S11: Recycle sensor

Figure 2-33

If not placed properly, documents can jam or tear when they are fed. The microprocessor on the RDF controller PCB is pre-programmed to make sure that the documents are placed properly by checking if any document is present over sensors at specific times.

Condition	Sensor	Description	Remarks
Recycle bar idle swing	S11	The Recycle bar swung idly without coming into contact with any document.	The RDF stops immediately upon detection.
Pick-up failure	S7	At pick-up, S7 does not detect the leading edge of the document after 1500 ms.	The separation belt, feeder roller, and pick-up roller stop immediately. The RDF stops after copying and delivering the preceding document.

Table 2-4a

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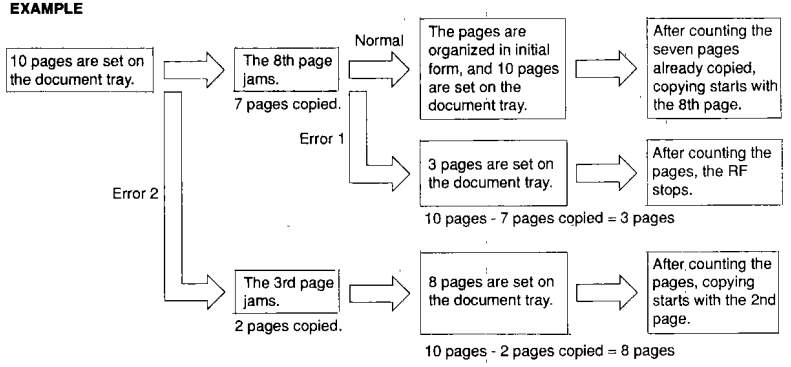
Condition	Sensor	Description	Remarks
Riding over stopper plate	S7	At time of document placement, the document rides over the stopper plate.	The RDF stops operation immediately upon detection.
Wrong document count (after jam removal)	-	After removal of a jam, the number of documents set on the document tray is fewer than the number of documents already copied ; see EXAMPLE.	The RDF stops immediately upon detection.
Wrong document count	-	The cycle bar fails to fall through the document tray, preventing detection of the last page. On average, the document tray holds up to 50 sheets of A5, STMT, A4, B5, and LTR or 25 sheets of A3, B4 11" x 17" and LGL.	The RDF stops after counting up to 100 sheets.

Table 2-4b

EXAMPLE


10 pages are set on the document tray.
The 8th page jams.
7 pages copied.
Normal
The pages are organized in initial form, and 10 pages are set on the document tray.
After counting the seven pages already copied, copying starts with the 8th page.
Error 1
3 pages are set on the document tray.
After counting the pages, the RF stops.
10 pages - 7 pages copied = 3 pages
Error 2
The 3rd page jams.
2 pages copied.
8 pages are set on the document tray.
After counting the pages, copying starts with the 2nd page.
10 pages - 2 pages copied = 8 pages

The copier remembers how many documents it has copied at time of a jam. The data is sent to the RDF after jam removal; and the RDF, in response, circulates the documents which had already been copied and sets the rest on the copyboard in sequence for copying. As such, if the number of documents set after jam removal is not correct, copies will not be as normally expected.

In the diagram above, error 1 is identified as 'wrong document count', and both RDF and copier will be stopped with a message displayed to that effect; error 2, however, will not stop the machine operation.

1. Resetting

If the machine stops operation because of 'wrong document count', it may be reset by removing and then placing all documents. Note that some copiers display a message; follow their respective instructions.

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III. EDITOR

A. Outline

1. Electrical Circuitry

The editor is controlled by the editor controller PCB. The editor controller PCB is a microprocessor and, according to the pre-programmed instructions, it reads points pressed by a cordless pen using a plane-shaped resistor to send signals to the copier as necessary.

2. Communication with the Copier

The editor communicates with the copier in serial. The editor is supplied with power by the RDF, and the editor controller PCB converts 5 VDC to 3.5 VDC.

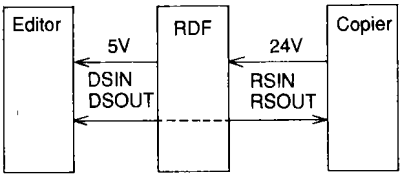

Figure 2-34

3. Inputs to and Outputs from the Editor Controller PCB

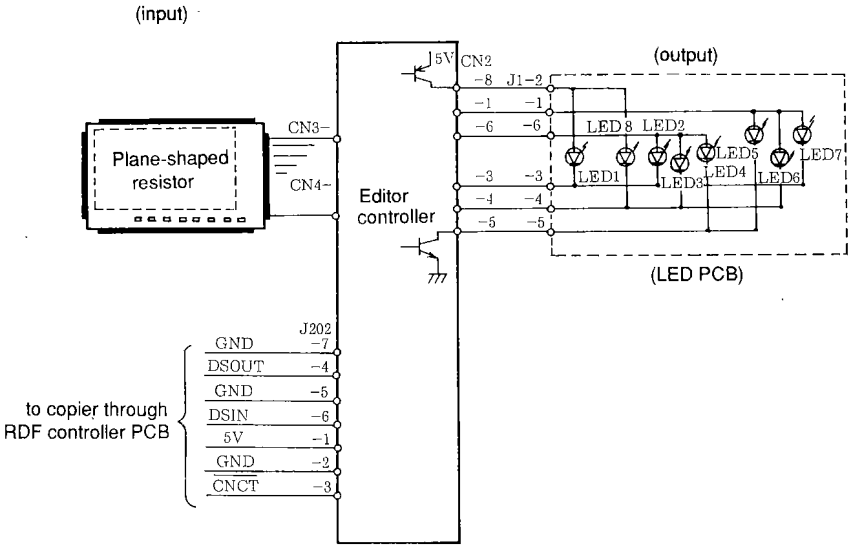

Figure 2-35

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4. Basic Construction of Editor

The editor consists of a tablet and a cordless pen.

Figure 2-36 shows the basic construction of the tablet. As shown in Figure 2-36A, the table consists of several layers, i.e, from above, a protection sheet, X plane-shaped resistor, Y plane-shaped resistor, and fixed plate.

The Y plane-shaped resistor is equipped with bosses called dot spacers. These dot spacers are arranged over the Y plane-shaped resistor and serve to prevent contact between the X plane-shaped resistor and the Y plane-shaped resistor when the table is free of pressure.

The editor controller reads points pressed by the cordless pen and the settings as if they are inputs.

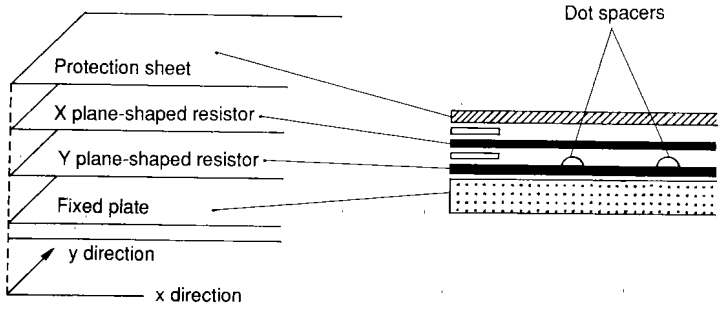

Figure 2-36a

Figure 2-36d

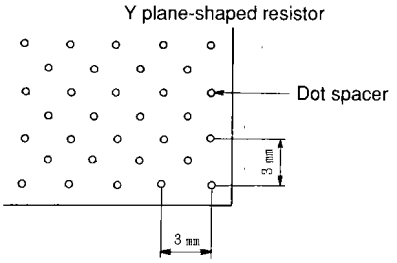

Figure 2-36c

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B. Electrical Circuitry

1. Reading Input Operations

The editor identifies presses with the cordless pen as explaned below.

Figure 2-37 shows the equalizer circuit of the comparator unit; SW1 is ON, and SW2 through SW4 are OFF.

Inputs of voltage pressure divided at Ra, Rb, Rc, and Rd are sent to the negative side of the comparator; Rc is a contact resistor.

The reference voltage of the comparator, on the other hand, are divided at R1 and R2 and sent to the positive side.

When a point on the tablet receives more than a specific force, the contact resistance (Rc) lowers and, as a result, the voltage sent to the negative side of the comparator increases.

The above causes output Vo of the comparator to change from '1' to '0', enabling the microprocessor to know that the tablet was pressed.

2. Reading X Coordinates

Figure 2-38 shows the equalizer circuit of the tablet unit; SW1 and SW2 are ON, and SW3 and SW4 are OFF.

The switches are shifted as shown in Figure 3-38 to lead the divided voltage to the A/D converter, thereby allowing the microprocessor to read the X coordinates.

Since the input impedance of the A/D converter is appreciably large, effects of Rc (contact resistance) on the X coordinates are absent.

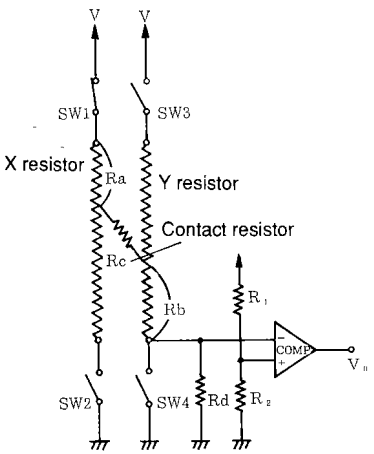

Figure 2-38 Equalizing Circuit of Comparator

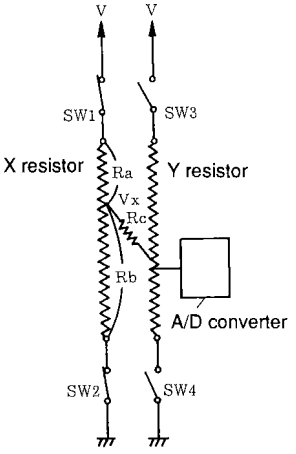

Figure 2-39 Reading X Coordinates

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3. Reading Y Coordinates

The switches are shifted as shown in Figure 2-39 (SW1 and SW2 are OFF, and SW3 and SW4 are ON) to read the Y coordinates as for X coordinates.

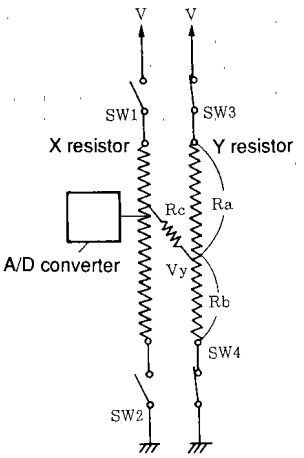

Figure 2-39 Reading Y Coordinates

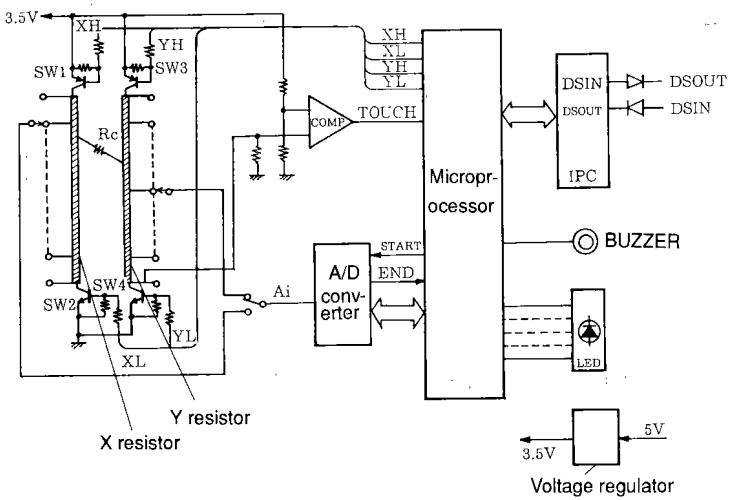

Figure 2-40 Block Diagram of Tablet and Editor

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IV. SELF DIAGNOSIS

A. SELF DIAGNOSIS

The machine is equipped with a self diagnostic mechanism. The microprocessor on the RDF controller PCB is pre-programmed to check the condition of the machine and, when it finds an error, indicates an error cord on the copier's contorol panel.

Code	Cause	Description
E400	• Data communication (with copier)	• The communication with the copier is disrupted for 5 sec or more; the communicatioin is monitored at all times.
E401	• Pick-up motor (rotation) • Pick-up roller sensor (S5; faulty)	A flag is attached to the shaft of the pick-up motor (M1); the flag blocks the pick-up roller sensor (S5) to monitor the rotation of the morter • S5 does not go ON and OFF twice or more within 1 sec.
E402	• Belt motor (M3; rotation) • Belt motor clock sensor (S10; faulty)	• The number of belt clock pulses within 200 ms is below a specific value.
E403	• Feeder motor (M2; rotation) • Feeder motor clock sensor (S9; faulty)	• The number of feeder motor clock pulses within 200 ms is below a specific value.
E411	• Document sensor (S1; faulty) • Registration sensor (S3; faulty) • Pre-registration sensor (S2; faulty)	• The output of the sensor is 2.3 V or more in the absence of paper

Table 2-5

Note:

i. To reset the machine after activation of the self diagnostic mechanism, switch the copier OFF and then ON.

ii. Copies may still be made even when the RDF is out of order; open the RDF, and set the documents on the copier's copyboard.

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V. TROUBLESHOOTING

A. Troubleshooting by Functional Fault

1. E400

Cause	Step	Checks	YES/NO	Remedy
	1	Switch the machine OFF and then ON. Is the problem corrected?	YES	End. Check the wiring between the copier's DC controller PCB and the RDF controller PCB.
5V power supply	2	Set the tester to the 20VDC range, and connect the + probe to CP2 and the - probe to CP1. Is the voltage about 5V?	NO	Replace the RDF controller PCB.
Wiring	3	Set the tester to the 200VDC range, and connect the + probe to J2-6 and the - probe to J2-5 on the RDF controller PCB. Is the voltage about 24V?	NO	Check the wiring from the copier's power supply.
RF controller PCB	4	Replace the RDF controller PCB. Is the problem corrected?	YES	End.
			NO	Replace the copier's DC controller PCB.

Table 2-6

2. E401

Cause	Step	Checks	YES/NO	Remedy
Pick-up roller sensor (S3)	1	Set the tester to the 20VDC range, and connect the + probe to J9-8 and the - probe to J9-9 on the RDF controller PCB. Turn the flag (light-blocking plate on the pick-up roller shaft by hand; is the voltage about 5V when the flag is at the sensor and about 0.15V otherwise?	NO	Check the wiring between the pick-up roller sensor (S3) and the RDF controller PCB; if normal, replace the pick-up roller sensor (S3).
Pick-up motor (M1)	2	Set the tester to the 200VDC range, and connect the + probe to J12-1 and the - probe to J12-2 on the RDF controller PCB. Press the COPY START key; is the voltage about 22V?	YES	Check the wiring between the pick-up motor and the RDF controller PCB; if normal, replace the RDF controller PCB.
			NO	Replace the RDF controller PCB.

Table 2-7

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3. E402

Cause	Step	Checks	YES/NO	Remedy
Belt motor clock sensor (S10)	1	Set the tester to 20VDC range, and connect the + probe to J9-23 and the - probe to J9-24 on the RDF controller PCB. Turn the clock disk slowly by hand; does the voltage alternate between 5V and 0V?	NO	Check the wiring between the belt motor clock sensor and the RDF controller PCB; if normal, replace the belt clock sensor.
Belt motor (M3)	2	Set the tester to the 200VDC, and connect the + probe to J7-1 and the - probe to J7-2 on the RDF controller PCB. Press the COPY START key; is the voltage 23V?	YES	Check the wiring between the belt motor and the RDF controller PCB; if normal, replace the belt motor.
			NO	Replace the RDF controller PCB.

Table 2-8

4. E403

Cause	Step	Checks	YES/NO	Remedy
Feeder motor clock sensor (S9)	1	Set the tester to the 20VDC range, and connect the + probe to J9-20 and the - probe to J9-21 on the RDF controller PCB. Turn the clock disk slowly by hand. Does thevoltage alternate between 5V and 0V?	NO	Check the wiring between the feeder motor clock sensor and the RDF controller PCB; if normal, replace the feeder motor clock sensor.
Feeder motor (M2)	2	Set the tester to the 200VDC range, and connect the + probe to S11-2 and the - probe to J11-1 on the RDF controller PCB. Press the COPY START key; is the voltage 23V?	YES	Check the wiring between the feeder motor and the RDF controller PCB; if normal, replace the feeder motor.
			NO	Replace the RDF controller PCB.

Table 2-9

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5. E411

<table>
<tr><th>Cause</th><th>Step</th><th>Checks</th><th>YES/NO</th><th>Remedy</th></tr>
<tr><td rowspan="2">Document sensor (S1), Registration sensor (S3), Pre-registration sensor (S2)</td><td rowspan="2">1</td><td rowspan="2">Connect the probes of the digital multimeter to the following connectors on the RDF controller PCB; is the reading 2.3V or less when the sensors are not blocked?
<table><tr><th></th><th>(+)</th><th>(-)</th></tr><tr><td>Document sensor (S1),</td><td>J5-7</td><td>J5-8</td></tr><tr><td>Registration sensor (S3),</td><td>J9-25</td><td>J9-28</td></tr><tr><td>Pre-registration sensor (S2)</td><td>J9-27</td><td>J9-28</td></tr></table></td><td>YES</td><td>Go to step 2.</td></tr>
<tr><td>NO</td><td>Replace the RDF controller PCB.</td></tr>
<tr><td>Document sensor (S1), Registration sensor (S3), Pre-registration sensor (S2)</td><td>2</td><td>Is the light-receiving cell of each sensor soiled with paper lint?</td><td>YES</td><td>Clean the light-receiving cell using a cotton stick, and go to step 3.</td></tr>
<tr><td>LED1, LED2, LED3 (for sensor)</td><td>3</td><td>Connect the probes of the digital multimeter to the following connectors on the RDF controller PCB; is the reading between 0.6V and 1.6V?
<table><tr><th></th><th>(+)</th><th>(-)</th></tr><tr><td>LED1</td><td>J9-1</td><td>J9-2</td></tr><tr><td>LED2</td><td>J9-3</td><td>J9-2</td></tr><tr><td>LED3</td><td>J9-5</td><td>J9-2</td></tr></table></td><td>NO</td><td>Check the wiring between the LEDs and the RDF controller PCB; if normal, replace the LED(s).</td></tr>
<tr><td>Sensor (output level)</td><td>4</td><td>Go back to step 1 after performing steps 2 and 3 to check the output of the sensors; is the reading 1.2V or less?</td><td>NO</td><td>Adjust the position of the sensors.</td></tr>
<tr><td rowspan="2">Sensor</td><td rowspan="2">5</td><td rowspan="2">Perform step 4. Is the problem corrected?</td><td>YES</td><td>End.</td></tr>
<tr><td>NO</td><td>Replace the sensor(s).</td></tr>
</table>

Table 2-10

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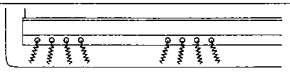
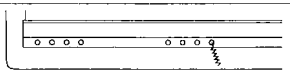
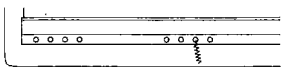
B. Self Diagnosis (editor)

The editor's controller PCB is equipped with a mechanism programmed to check its own condition.

When an error is found, the LEDs on the editor are flashed to indicate the error.

	Pattern of flashing	Cause	Description
1		• Harness (broken, open circuit) • Editor controller (faulty)	• Checked at power-on.
2		• Cable between plane-shaped resistor and editor controller (broken, displaced)	• Checked at power-on.
3		• Plane-shaped resistor (short circuit) • Input face (excess force)	• Checked at power-on.
4		• Communication (error)	• Checked at all times; when communication is interrupted for 200 ms or more.

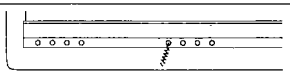



Table 2-11

The LEDs are flashed ON and OFF at intervals of one second.

Errors for patterns 1 and 4 may be cleared by switching the copier OFF and then ON.

Errors 2 and 3 may be cleared by removing the cause of the errors.

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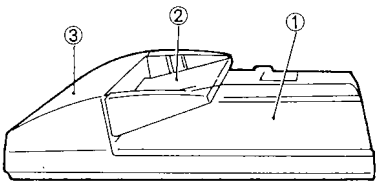
I. EXTERNAL

A. External Covers



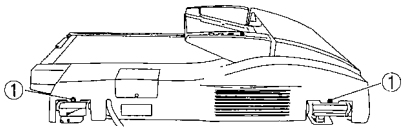
① Body cover
② Document tray
③ Upper cover

Figure 3-1

Detach the covers as necessary for cleaning, inspecting, or repairing the inside of the machine.

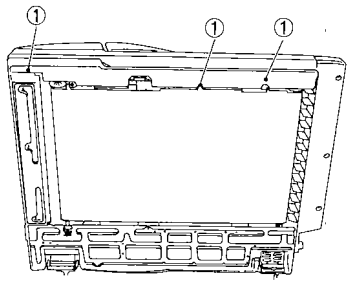
1. Detaching the Body Cover

1) Remove the seven mounting screws that hold the body cover in place.



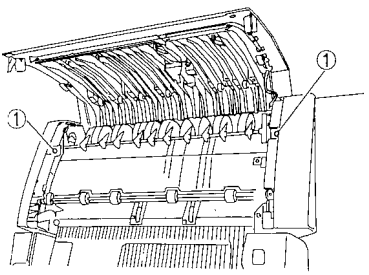
① Screws (2 pcs.)

Figure 3-2



① Screws (2 pcs.)

Figure 3-3



① Screws (2 pcs.)

Figure 3-4

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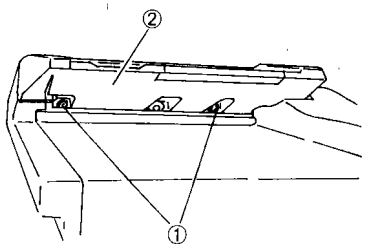
2) Remove the two mounting screws, and detach the document tray.

Note:

The document tray is connected by a cable; take care not to damage the cable during work.



① Screw ② Document tray

Figure 3-5

3) Detach the body cover while avoiding contact with the document tray.

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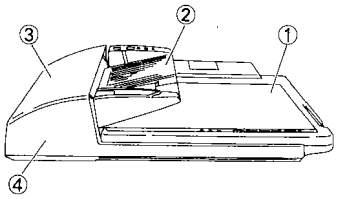
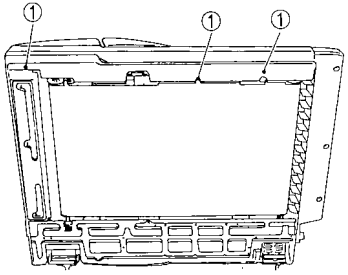
2. Detaching the editor body cover.



① Body cover (upper)
② Document tray
③ Upper cover
④ Body cover (front)

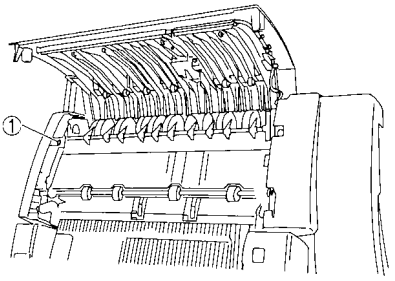
Figure 3-6

1) Remove the four mounting screws, and detach the body cover (front).



① Screws (3 pcs.)

Figure 3-7



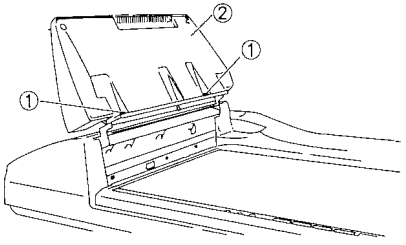
① Screws (1 pcs.)

Figure 3-8

2) Remove the two mounting screws, and detach the document tray.

Note:

The document tray is connected by a cable; take care not to damage the cable during work.



① Screws (2 pcs.) ② Document tray

Figure 3-9

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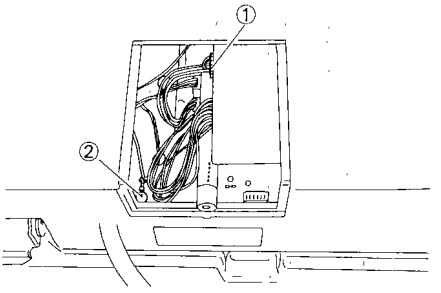
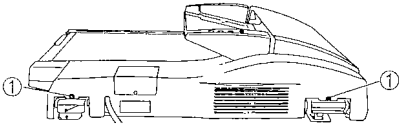
3) Detach the RDF controller cover; then,disconnect the connector (CN1)) , and detach the grounding wire..



① Connector (CN1)
② Grounding wire

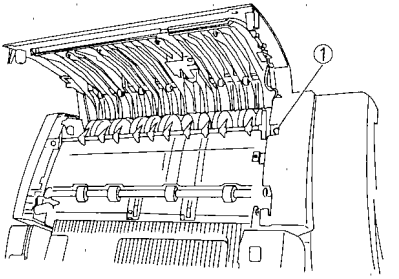
Figure 3-10

4) Remove the three mounting screws, and detach the body cover (upper) while avoiding contact with the document tray.



① Screws (2 pcs.)

Figure 3-11



① Screws (1 pcs.)

Figure 3-12

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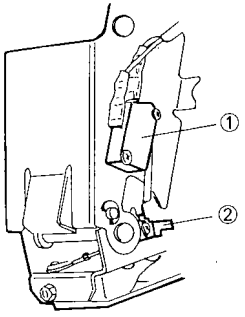
B. Switches

The RF switch (MS1) and the upper cover open/closed switch (MS2) are used to prohibit operation of the machine when the machine or the upper cover is open.

1. Adjusting the RDF Switch (MS1)

1) Detach the body cover (upper).
2) Open and close the RDF, and adjust the holder plate so that the RDF switch (MS1) goes ON and OFF when the distance between the copyboard glass and the tip of the RDF is between 10 and 100 mm.



① Switch (MS1) ② Holder plate

Figure 3-13 Right Hinge Assembly

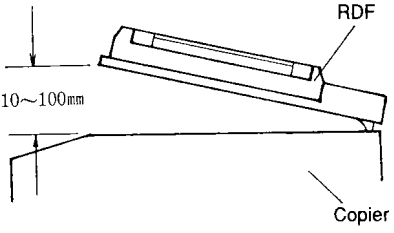


Figure 3-14

2. Upper Cover Switch (MS2)

1) Check that the upper cover switch (front, rear) is ON when the upper cover is closed.

C. Adjusting the Height of the RDF

1) Detach the copier's rear end plate. Turn the adjusting screw so that the rear location rubber piece (left, right) is 0 to 0.5 mm from the horizontal size plate on the copyboard glass when the body is closed.

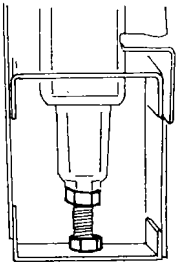


Figure 3-14

2) Check that the front location rubber piece (left, right) is in contact with the copyboard glass.

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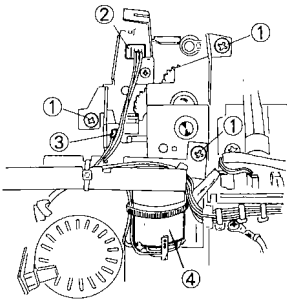
II. DRIVE SYSTEM

A. Detaching the Pick-Up Motor Unit

1) Detach the body cover.
2) Cut the harness band as necessary.
3) Disconnect the jack of the sensor (S5) on the pick-up motor mount.
4) Disconnect the jack of the upper cover sensor (S4).
5) Disconnect the jack (J12) of the pick-up motor (M1).
6) Remove the three mounting screws.

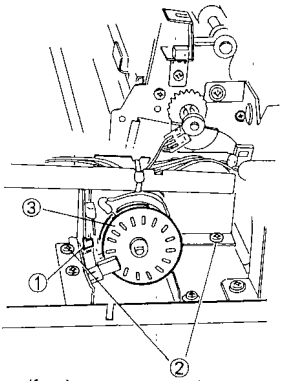


① Mounting screw
② Upper cover sensor (S4)
③ Pick-up roller sensor (S5)
④ Pick-up moter (M1)

Figure 3-16

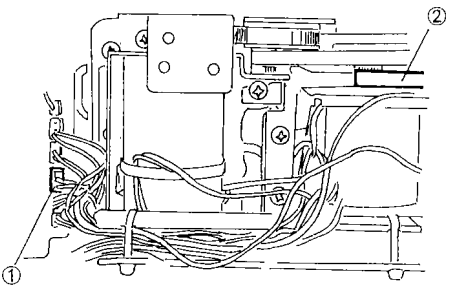
B. Detaching the Feeder Motor Unit

1) Detach the pick-up motor unit.
2) Disconnect the jack of the sensor (S9) on the feeder motor.
3) Disconnect the jack (J11) of the feeder motor (M2).
4) Remove the three mounting screws.
5) Detach the drive belt.



① Sensor (feeder motor mount)
② Mounting screw
② Feeder moter (M2)

Figure 3-17



① Feeder motor jack (J11)
② Drive belt

Figure 3-18

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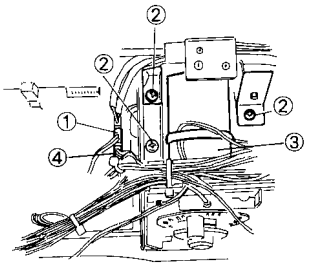
C. Detaching the Belt Motor Unit

1) Disconnect the jack (J6) of the brake (BK) attached to the belt motor unit mount.
2) Disconnect the jack of the belt clock sensor (S10).
3) Disconnect the jack (J7) of the belt motor.
4) Remove the three mounting screws.



① Jack (J6)
② Mounting screw
③ Belt moter (M3)
④ Jack (J7)

Figure 3-19

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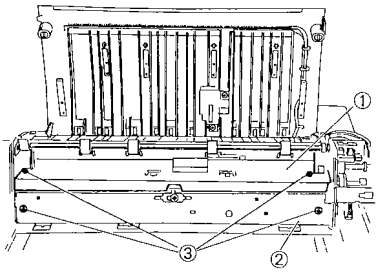
III. FEEDER SYSTEM

A. Pick-Up Roller

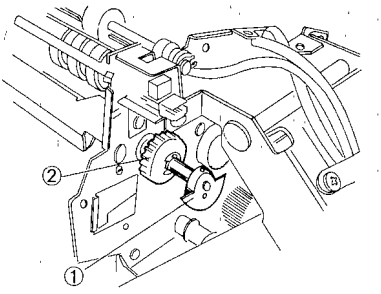
1) Remove the two screws that hold the document inlet guide plate.
2) Remove the two screws of the document tray mount.
3) Detach the document inlet lower guide.



① Document inlet lower guide plate
② Document tray mount
③ Mounting screw

Figure 3-20

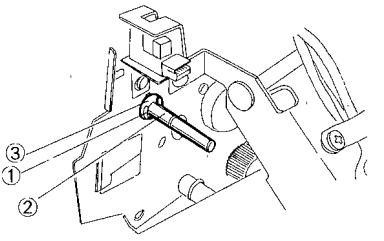
4) Detach the pick-up motor unit.
5) Loosen the hex screw using a hex wrench, and detach the pick-up shaft flag; then, detach the drive gear while taking care not to drop the pin.



① Pick-up shaft flag ② Drive gear

Figure 3-21 (rear)

6) Remove the E-ring.



① E-ring
② Pick-up roller shaft
③ Pick-up roller bushing

Figure 3-22

7) Remove the E-ring at the front.
8) Detach the feeder roller drive belt at the front.

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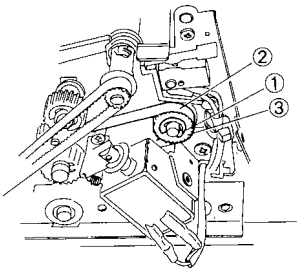

① E-ring
② Feeder roller drive belt (front)
③ Drive gear

Figure 3-23 (front)

9) Detach the drive gear; take care not to drop the pin.
10) Detach the pick-up roller while taking care not to damage it.

B. Adjusting the Pick-Up Roller Stop Position

The pick-up roller stops at a point relative to the position of the flag (light-blocking plate) attached to the pick-up roller shaft.

Go over the following adjustments whenever the flag has been detached during replacement of the pick-up roller in the field.

1) Attach the flag so that the pick-up roller and the flag are as shown in Figure 24; adjust the flag so that the curving sides face the same direction.

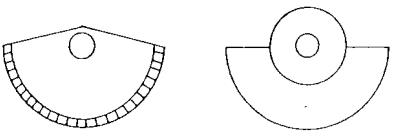

Figure 3-24

2) Check that the pick-up roller is positioned as shown in Figure 3-25 at time of power-on.

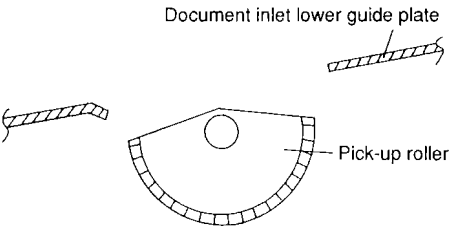

Figure 3-25

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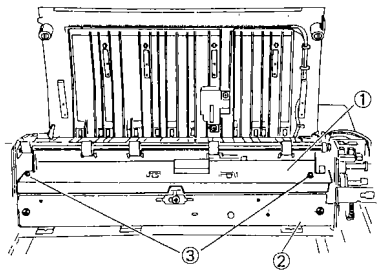
C. Feeder Roller

1) Remove the two screws that hold the document inlet lower guide plate.
2) Remove the two screws from the document tray mount.
3) Detach the document inlet lower guide, and detach the document tray mount.

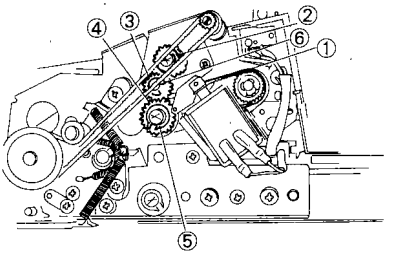


① Document inlet lower guide plate
② Document tray mount
③ Mounting screw

Figure 3-26

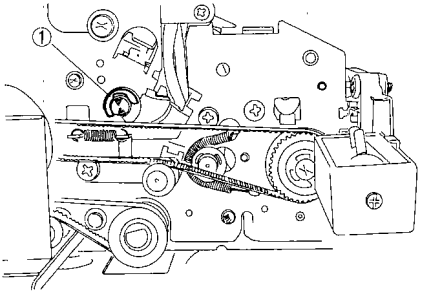
4) Detach the feeder roller drive belt.
5) Remove the grip stop ring (front).
6) Detach the separation belt drive gear, and remove the relay gear E-ring.
7) Detach the separation belt drive gear and the relay gear.
8) Detach the feeder roller drive gear.

9) Remove the E-ring at the rear.



① Feeder roller drive belt
② Separation belt drive gear
③ Relay gear
④ Feeder roller drive gear
⑤ Grip stop ring
⑥ E-ring

Figure 3-27



① E-ring

Figure 3-28

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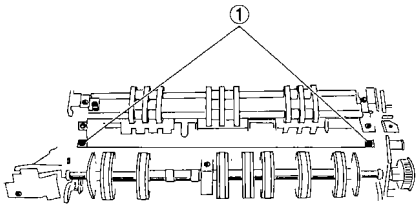
8) Remove the two screws, and detach the holding guide plate.



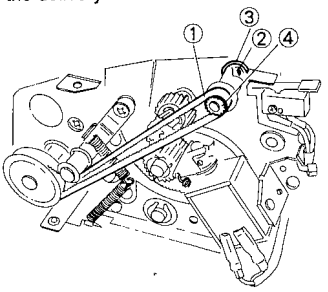
① Mounting screws

Figure 3-29

9) Detach the feeder roller assembly.

D. Delivery Roller

1) Detach the delivery roller drive belt.
2) Detach the drive gear; take care not to drop the pin.
3) Remove the E-ring; then, remove the grip stop ring at the rear.
4) Detach the delivery roller bushing, and detach the delivery roller.



① Delivery roller drive belt
② E-ring
③ Delivery roller bushing
④ Drive gear

Figure 3-30

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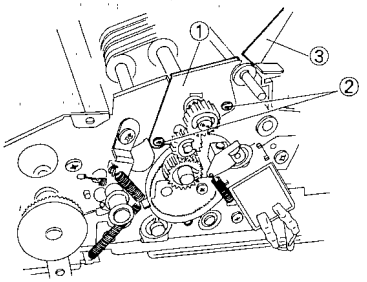
E. Separation Belt Assembly

1) Open the pick-up/delivery guide plate.



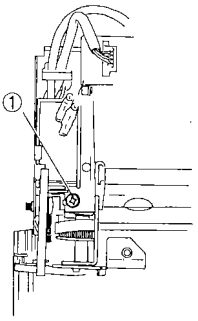
① Belt unit fixing end plate (front)
② Mounting screws
③ Pick-up/Delivery guide plate

Figure 3-31

2) Remove the two mounting screws of the belt unit fixing end plate (front).

F. Reversing Roller

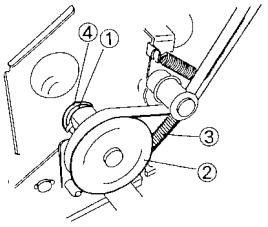
1) Remove the mounting screw, and detach the paper deflector solenoid unit.



① Mounting screw

Figure 3-32

2) Detach the reversing drive belt (front, rear), and detach the gear; then, remove the E-ring (rear) and the grip stop (front).



① Grip stop ring
② Gear
③ Belt
④ Bushing

Figure 3-33

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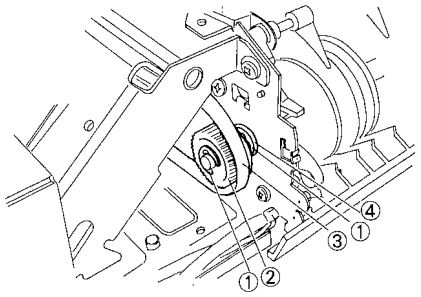
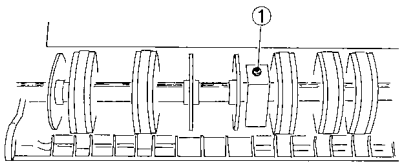


① E-ring
② Gear
③ Belt
④ Bushing

Figure 3-34

3) Detach the bushing (front, rear; see Figures 3-33-④ and 3-34-④.)
4) Remove the mounting screw of the sensor cover.



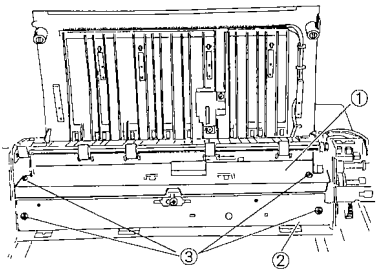
① Mounting screw

Figure 3-35

5) Detach the reversing roller.

G. Registration Roller

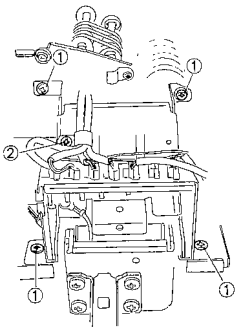
1) Remove the two screws that hold the document inlet lower guide.
2) Remove the two screws of the document tray mount.
3) Detach the document lower guide, and detach the document tray mount.



① Document inlet lower guide plate
② Document tray mount
③ Mounting screws

Figure 3-36

4) Detach the pick-up roller; see discussions on the pick-up roller.
5) Remove the four screws and the cord retaining screw; then, detach the hinge unit (left).



① Mounting screw
② Cord retaining screw

Figure 3-37

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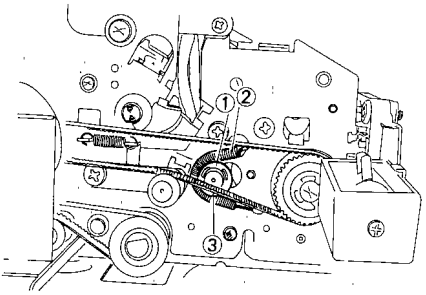
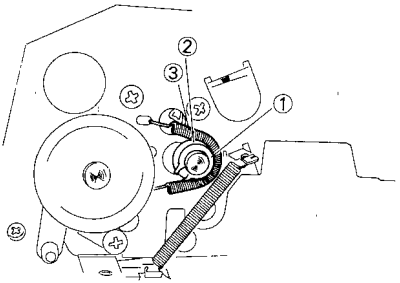
6) Detach the registration roller bushing; then remove the tension spring and the E-ring (rear).



① E-ring
② Tension spring
③ Bushing

Figure 3-38

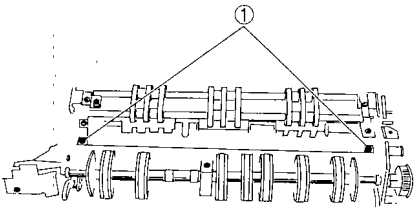
7) Detach the registration roller front bushing; then, remove the tension spring grip stop ring (front).



① Grip stop ring
② Tension spring
③ Bushing

Figure 3-39

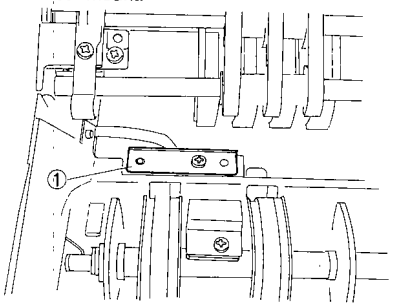
8) Remove the two screws, and detach the holding guide plate.



① mounting screws

Figure 3-40

9) Remove the screw, and detach the registration sensor mount.



① Sensor mount

Figure 3-41

10) Detach the registration roller.

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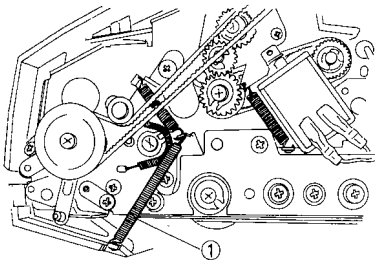
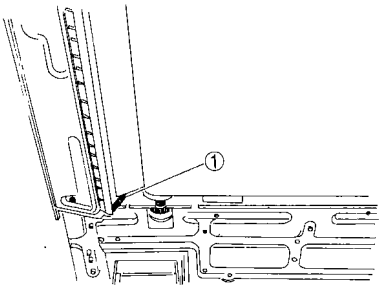
H. Reversing Guide

1) Remove the reversing guide spring (front, rear).



① Spring (front, rear)

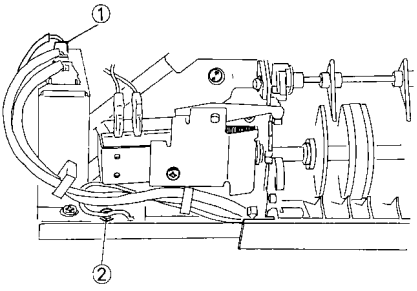
Figure 3-42



① Spring (rear)

Figure 3-43

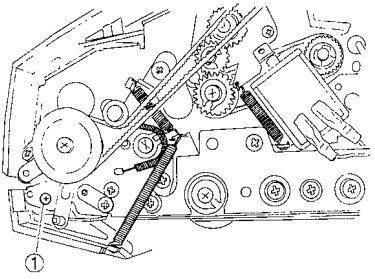
2) Detach the jack of the reversal sensor and the grounding wire.



① Sensor jack ② Grounding wire

Figure 3-44

3) Remove the mounting screw.



① Mounting screw

Figure 3-45

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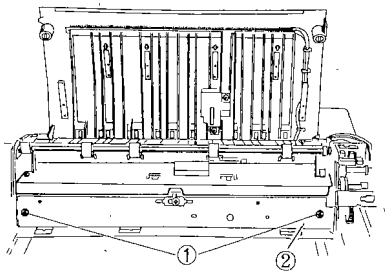
I. Detaching the Stopper Plate Solenoid

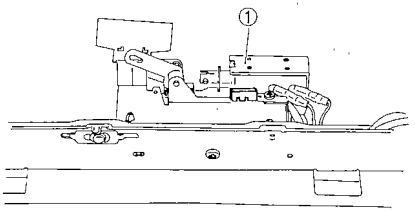
1) Remove the two screws that hold the document tray mount in place.



① Mounting screws
② Document tray mount

Figure 3-46

2) Detach the document tray mount, and detach the stopper plate solenoid.

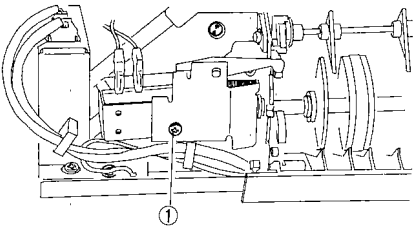


① Stopper plate solenoid

Figure 3-47

J. Adjusting the Paper Deflector Solenoid (SL3)

1) Loosen the solenoid mounting screw, and move the solenoid to adjust the position of the paper deflector plate.



① Mounting screw (for solenoid)

Figure 3-48

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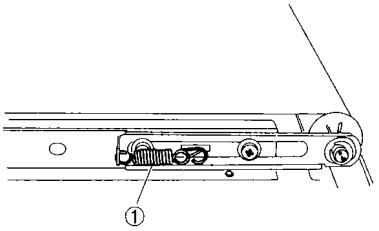
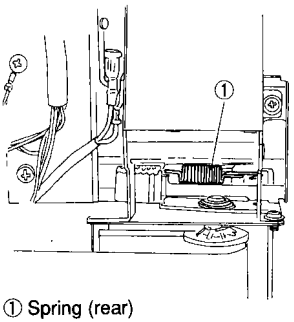
K. Feeder Belt

1) Detach the body cover (upper, lower).
2) Remove the springs at the front and the rear.



① Spring (front)

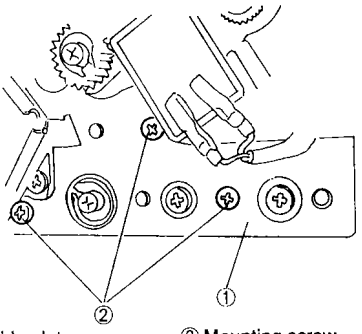
Figure 3-49



① Spring (rear)

Figure 3-50

3) Remove the three screws, and detach the side plate.



① Side plate ② Mounting screw

Figure 3-51

4) Pull out the feeder belt.

L. Cleaning

1. Belt Assembly

1) Dry wipe the feeder belt while moving it in the direction of the arrow.

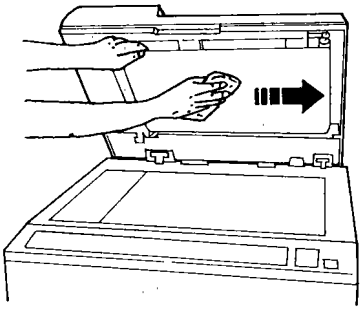


Figure 3-52

2) Turn the DIP switch (SW6) on the RDF controller ON; then, feed copy paper moistened with alcohol a the center.

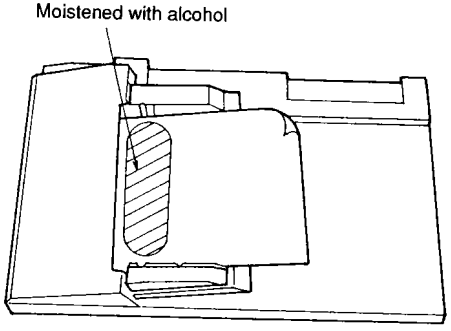


Figure 3-53

3) Turn the DIP switch OFF (all bits).
4) Attach eh RDF controller cover.

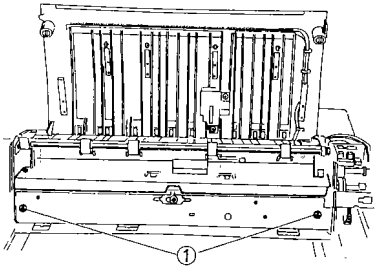
2. Sensors

The machine's document path is equipped with three transmission-type sensors and three photointerrupter-type sensors; the former being the document sensor (S1), pre-registration sensor (S2) and registration sensor (S3), while the latter being the pick-up sensor (S7), delivery sensor (S6), and reversal sensor).

The light-receiving face of a transmission-type sensor is more likely to collect paper dust than a photointerrupter-type sensor, sometimes leading to malfunction.

a. Cleaning the Document Sensor (S1)

1) Remove the two screws from he document tray mount.



① Mounting screws

Figure 3-54

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2) Clean the sensor (S1).

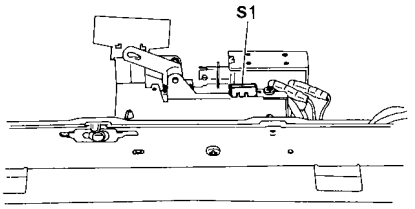
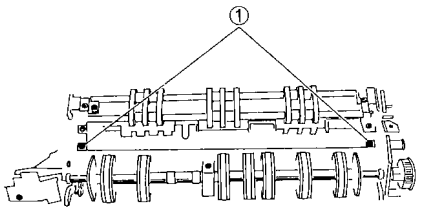


Figure 3-55

b. Cleaning the Pre-Registration Sensor (S2)

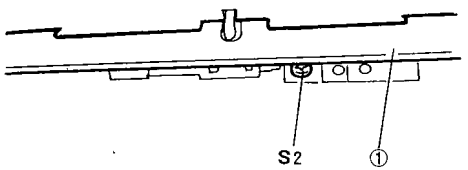
1) Remove the two screws, and detach the holding guide plate.



① Mounting screws

Figure 3-56

2) Clean the sensor (S2).

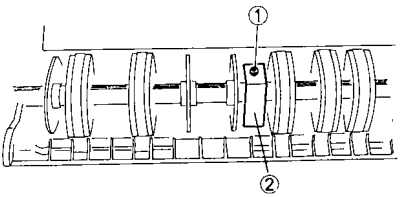


① Holding guide plate

Figure 3-57

c. Pre-Registration Sensor LED

1) Remove the screw, and detach the sensor LED cover.

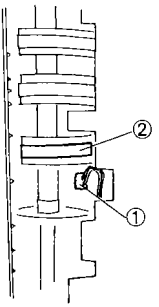


① Mounting screw ② Sensor LED cover

Figure 3-58

2) Detach the reversal guide; see p.3-15.

3) Disconnect the connector, and detach the sensor LED from above.



① Connector ② Reversal roller

Figure 3-59 (viewed from bottom)

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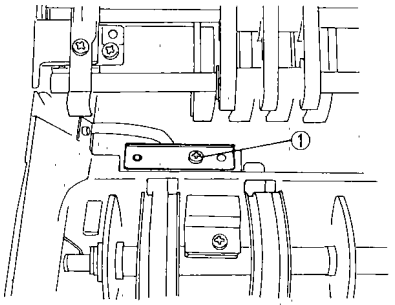
d. Registration Sensor (S3)

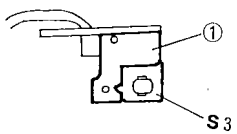
1) Remove the two screws, and detach the holding guide plate; see Figure 3-56.
2) Remove the screw, and detach the registration sensor mount.



① Mounting screw

Figure 3-60

3) Clean the sensor (S3).



① Sensor mount

Figure 3-61

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I. PERIODICALLY REPLACED PARTS

The machine does not have any part that must be replaced on a periodical basis.

II. DURABLES

Those parts referred to as durables may have to be replaced over the period of machine warranty because of wear or damage; they, however, need not be replaced until wear or damage calls for replacement.

June, 1991

No.	Parts name	Parts No.	Q'ty	Estimated life	Remarks
1	Feeder belt	FC1 - 1339 - 000	1	100,000	Replace it if dirt cannot be removed.

Table 4-1

Note:

The values are estimates only and are subject to change based on field data.

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III. SCHEDULED SERVICING CHART

Note:

Do not use solvents or oils not specified.

△ : Clean ● : Replace × : Oil □ : Adjust ◎ : Check

Ref.	Parts name	Description		Remarks
		every 100,000 copies	every 200,000 copies	
1	Feeder belt	△		
2	Documennt Sensor(S1)		△	
3	Pre-registration Sensor(S2)		△	
4	Registration Sensor(S3)		△	
5	Pick-up roller		△	
6	Separation belt	△		
7	Feeder roller	△		
8	Registration roller	△		
9	Delivery/Reversing roller	△		
10	Delivery roller		△	

Table 4-2

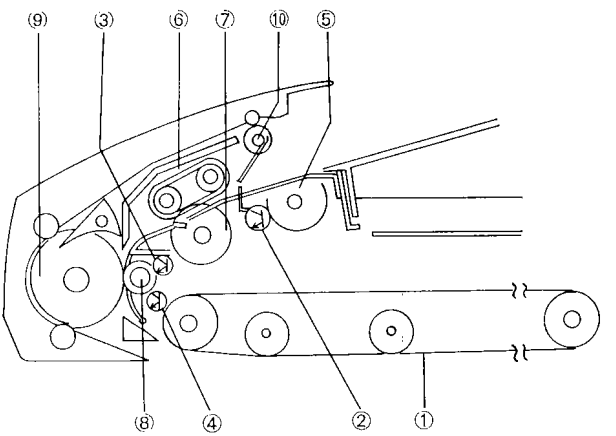

Figure 4-1

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I. ARRANGEMENT OF ELECTRICAL PARTS

A. Motors, Solenoids, and Sensors

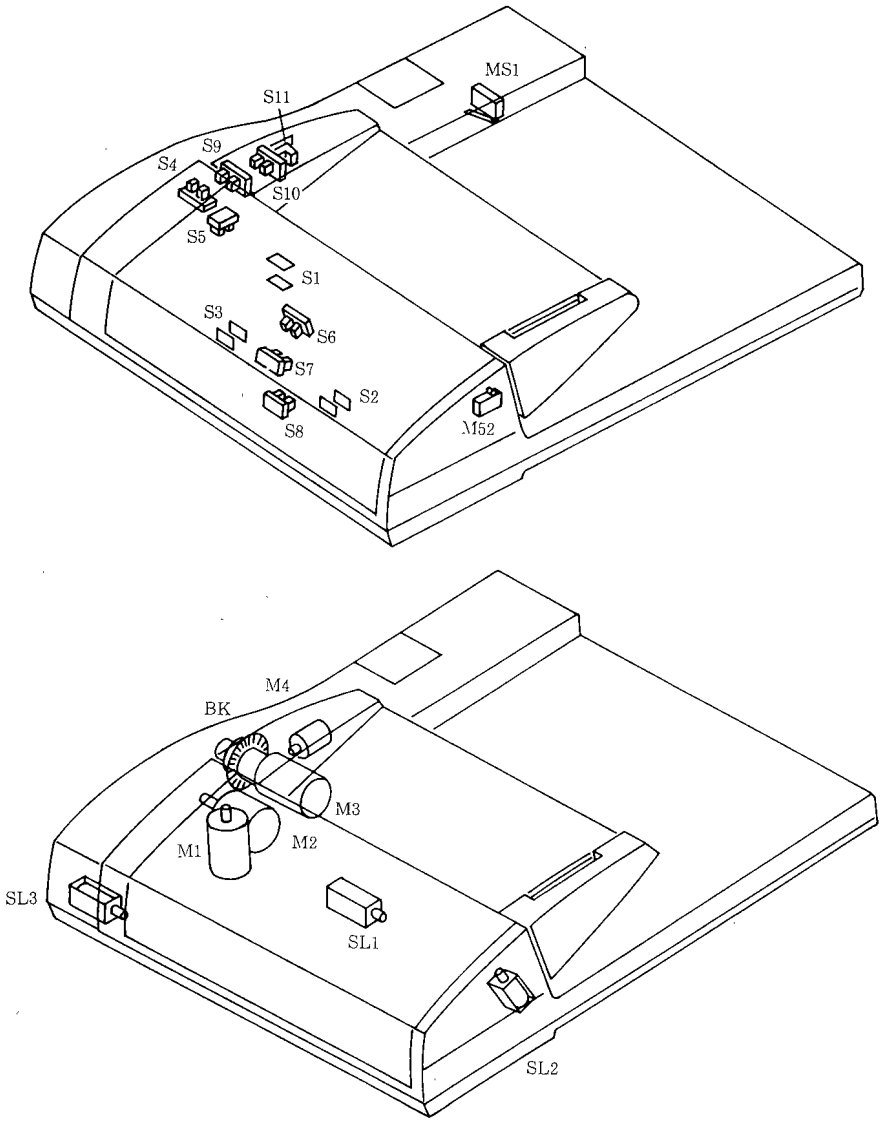

Figure A-1

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CANON RDF-B1/RDF-B1 EDITOR REV.0 JULY 1991 PRINTED IN JAPAN (IMPRIME AU JAPON)

Symbol	Name	Notation	Description
	Motor		
		M1	Pick-up motor
		M2	Feeder motor
		M3	Belt motor
		M4	Recycle motor
	Brake	BK	Belt motor brake
	Solenoid	SL1	Stopper plate solenoid
		SL2	Holder plate solenoid
		SL3	Deflector plate solenoid
	Microswitch	MS1	RDF open/closed switch
		MS2	Upper cover switch
	Phontointerrupter		
		S10	Belt motor clock sensor
		S5	Pick-up roller sensor
		S9	Feeder motor clock Sensor
		S6	Delivery sensor
		S7	Pick-up sensor
		S11	Cycle sensor
		S4	Upper cover sensor
		S8	Reversal sensor
	Phontotransistor	S1	Document sensor
		S2	Pre-registation sensor
		S3	Registration sensor
	LED	LED11	DOCUMENT SET indicator
		LED12	DOCUMENT SET indicator
		LED13	MIX MODE indicator
		LED14	MIX MODE indicator

Table A-1

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B. PCBs

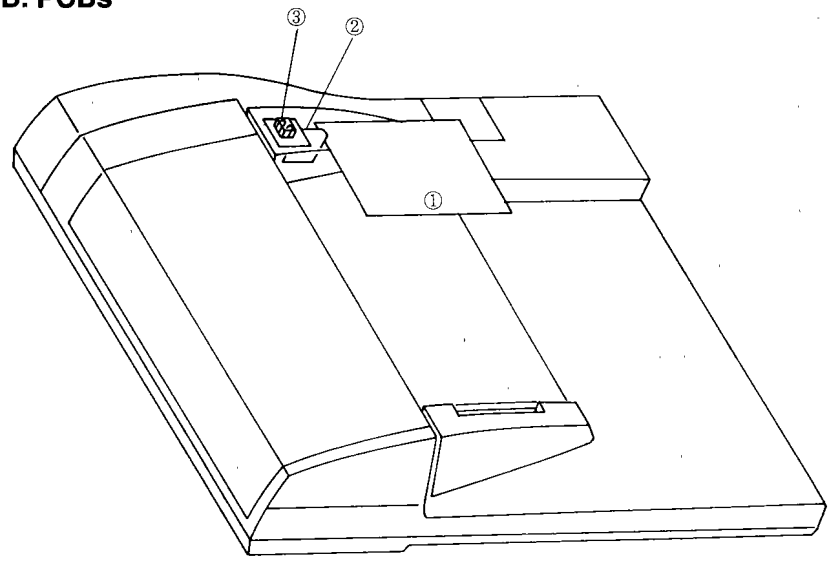

Figure A-2

Symbol	Name	Notation	Description
	RDF controller PCB	①	controls RDF.
	Display PCB	②	indicates DOCUMENT SET.
	MIX SIZE mode switching PCB	③	switches/displays MIX SIZE mode.

Table A-2

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II. Variable Resistors (VR), LEDs by PCB

Of the VRs, LEDs, and check pins found in the machine, those that may be used in the field are discussed.

Note:

Do not touch the VRs or check pins not discussed herein; they require special tools, instruments, and high precision.

Note:

i. Keep in mind that some LEDs emit light even when OFF.

ii. VRs that may be used in the field ..... ⊘

VRs that must not be used in the field ..... ⊘

A. RDF Controller PCB

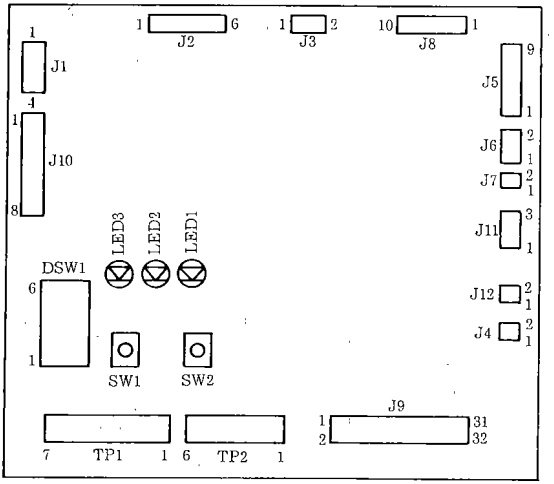

Figure A-3

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LED	Description
LED1	Use it to check the output of the document sensor.
LED2	Use it to check the output of the pre-registration sensor.
LED3	Use it to check the output of the registration sensor.

Table A-3

Pin No.	Description
TP1-1	reserved.
-2	reserved.
-3	reserved.
-4	reserved.
-5	reserved.
-6	reserved.
TP2-1	output of document sensor.
-2	output of pre-registration sensor.
-3	output of registration sensor.
-4	reserved.
-5	reserved.
-6	reserved.
-7	reserved.

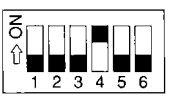
Table A-4

Checking the Outputs of the Document Sensor, Pre-Registration Sensor, and Registration Sensor

The light-emitting and light-receiving cells of the sensors are not constructed as a single entity; therefore, if the RDF controller PCB, documen sensor, pre-registration sensor, or registration sensor has been repalced in the field, it is important to make sure that the output of each sensor is correct.

Making Checks

1) Slide bit 4 of the DIP switch on the RDF controller PCB to 'ON'.



2) Press the MIXED SIZE mode switch once without paper on the document tray.
3) Check that LED1, LED2, and LED3 are ON and the voltage of TP2-1, TP2-2, and TP2-3 is 1.1 ± 0.1 V.
   If the voltage of either TP2-1, TP2-2, or TP2-3 is not as shown, check the position of the sensor(s);the light-emitting or-receiving cells may be displaced.

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The DIP switch on the RDF controller PCB serves the following functions. Make sure that the copier is switched OFF before shifting any of the bits of the DIP switch.

Use	Bit configuration	Description
Normal copying operation		When configured as shown, i.e., if all are 'OFF', normal copying operation is enabled.
Document stop position		When the MIXED SIZE mode switch is pressed, the document is picked up and stopped on the copyboard glass.
Sensor level		Each time the MIXED SIZE mode switch is pressed, the document sensor, registration sensor, and pre-registration sensor is enabled.
Separation belt, feeder roller cleaning (driving pick-up motor)		When configured as shown, the pick-up motor of the RDF rotates to clean the separation belt and the feeder roller; for details.

Table A-5 DIP Switch on RDF Controller PCB

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B. Display PCB

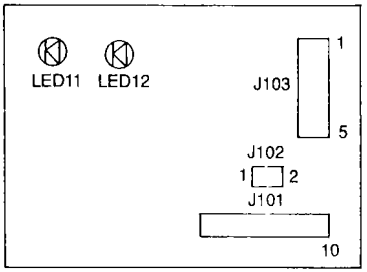

Figure A-15

LED	Description
LED11	DOCUMENT SET
LED12	DOCUMENT SET

Table A-6 LEDs on Display PCB

LED	Description
LED13	MIXED SIZE
LED14	MIXED SIZE

Table A-7 LEDs on Mode Switch PCB

C. Mixed sige mode switch PCB

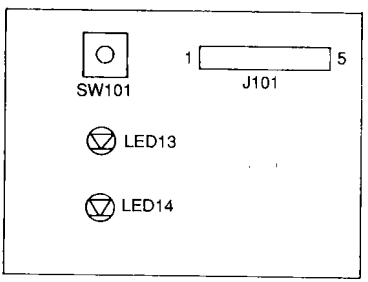

Figure A-16

SW	Description
SW101	Press it to specify the mixed size mode.

Table A-8 Switch on Mode Switch PCB

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D. Editor Controlloer PCB

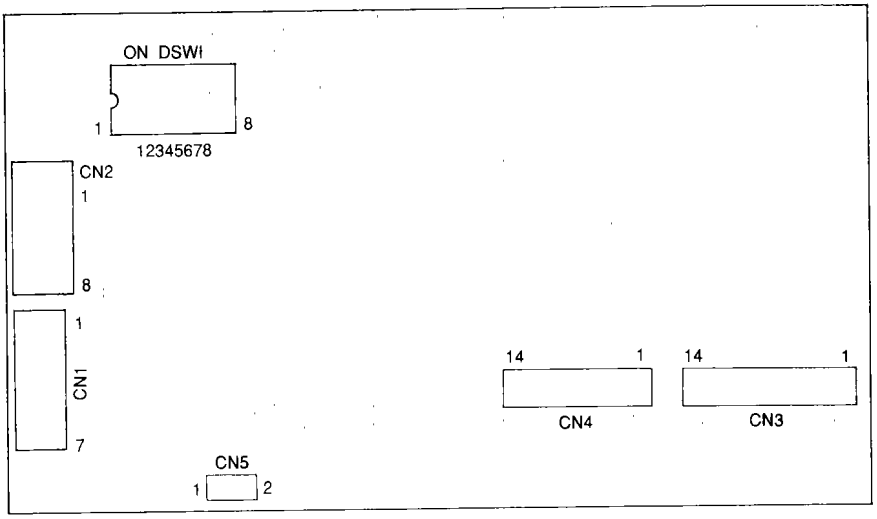

Figure A-17

■ Zero-Adjustment for Editor Tablet

If the editor controller PCB or the tablet has been replaced, configure the DIP switch on the editor controller PCB as shown on the label.

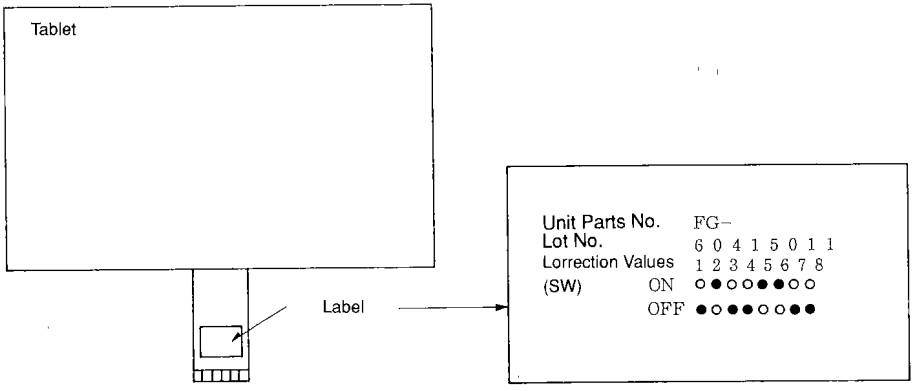

Figure A-18

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III. Adjusting the Document Stop Position

Make adjustments for 'document skew', 'distance to horizontal size plate', and 'leading edge stop position' in order named.

A. Document Skew

1) Remove the screw, and detach the RDF's cover.

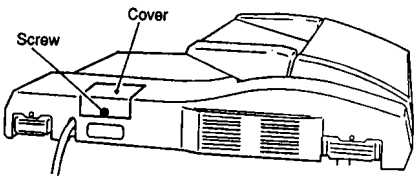
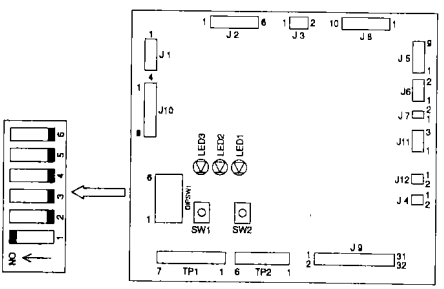


Figure A-4

2) Shift bit of the DIP switch on the controller PCB to ON.



3) Place the AF Test Sheet (FY9-9081) on the document tray; A4 (64 g/m2)paper may be substitued.

4) Press the MIXED DOCUMENT SIZE switch on the RDF tray once; the Test Sheet will be picked up and stopped on the copyboard glass.
5) Open the RDF slowly, and check that L1 and L2 (Figure A-6) are 2mm or less.

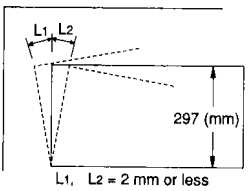


Figure A-6

· If outside the standards.
6) Loosen the nut at the rear of the right hinge unit and make adjustments using the adjusting screw; then, tighten the nut to fix the adjusting screw in place.

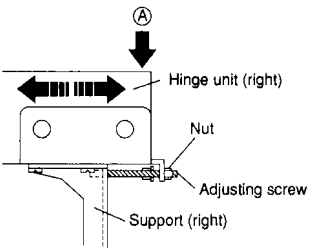


Figure A-7

Note:

When turning the sdjusting screw, hold the hinge unit and turn the screw while pushing the unit into the direction of A.

B. Distance to Horizontal Size Plate

1) Shift be 1 of the DIP switch on the RDF controller PCB to ON.

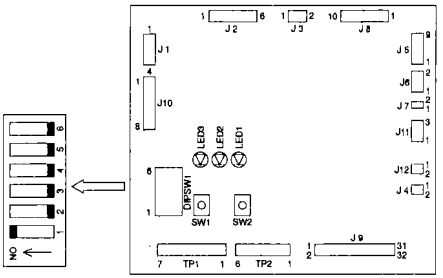


Figure A-8

2) Place the AF Test Sheet (FY9-9081) on the document tray; A4 (64 g/m2) paper may be substituted.
3) Press the MIXED DOCUMENT SIZE switch on the RDF tray once; Test Sheet will be picked up and stopped on the copyboard glass.
4) Open the RDF slowly, and check the position of the document.
5) Loosen the positioning screw (Figure A-10), and adjust the position of the document tray so that it satisfies the standard shown in Figure A-9.

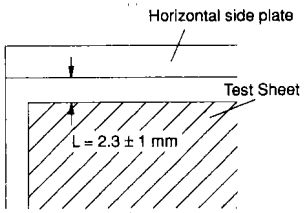


Figure A-9

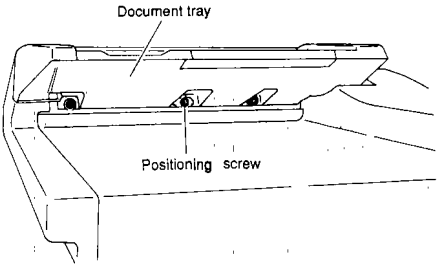


Figure A-10

C. Adjusting Document Leading Edge Stop position

1) Shift bits 1 and 4 of the DIP switch on the RDF controller PCB to ON.

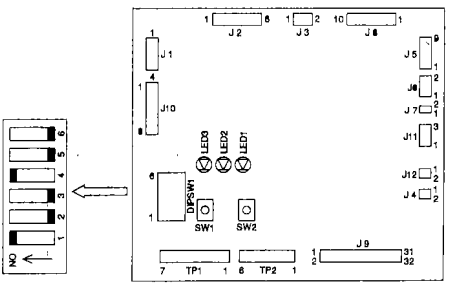


Figure A-11

2) Place the AF Test Sheet (FY9-9081) on the document tray; A4 (64 g/m2) paper may be substituted.
3) Press the MIXED DOCUMENT SIZE switch on the RDF tray; Test Sheet will be picked up and stopped on the copyboard glass.

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4) Open RDF slowly, and check if the position of the document is as shown in Figure A-12.

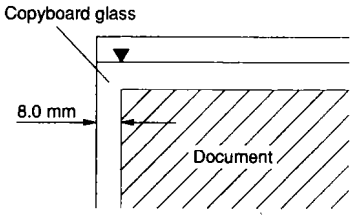

Figure A-12

5) The document leading edge stop position can be adjusted using SW1 and SW2 on the RDF controller.
A press on each switch moves the stop position by 0.33mm; when the position is as desired, press the MIXED DOCUMENT SIZE once to fix the setting.

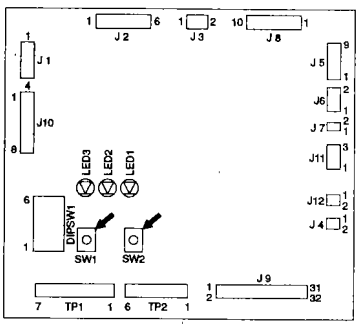

Figure A-13

Switches and Document Position.

Switch	Direction
SW1	Leading edge
SW2	Trailing edge

Note:

Holding down the switches will not move the position continuously.

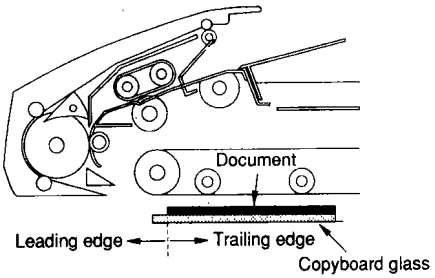

Figure A-14

EXAMPLE

Let us assume the following:

The MIXED SIZE switch has been pressed, and the document has been fed and stopped on the copyboard glass; when the RDF is lifted, the leading edge of the document is found 10 mm from the leading edge of the copyboard glass.

The RDF is closed with the document left behind on the copyboard blass.

Now, to move the stop position of the document 2 mm toward the leading edge,

2 mm ÷ 0.33 (adjustment pitch) = 6.06

The result of the calculation indicates that the stop position will move 2 mm toward the leading edge in response to six presses on SW2. When the MIXED SIZE switch is pressed once after six presses on SW2, the document will be discharged and the new setting will be stored.

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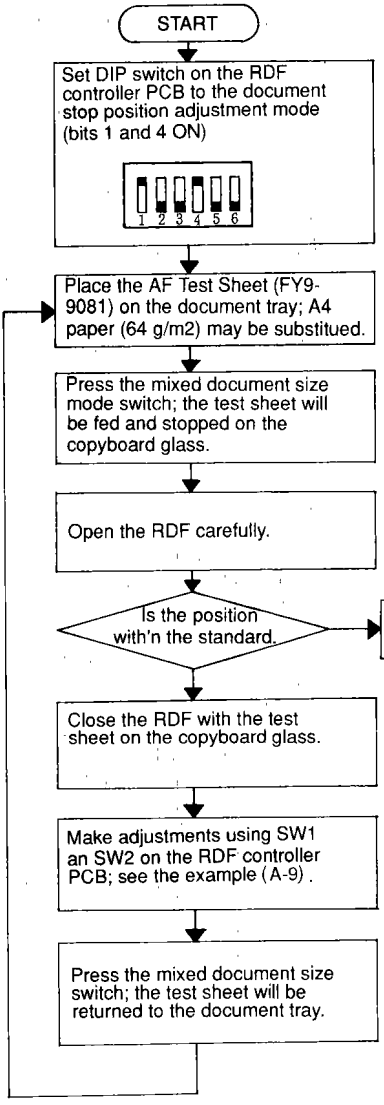
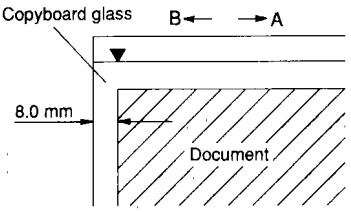
Adjusting Document Leading Edge Stop Position


START
Set DIP switch on the RDF controller PCB to the document stop position adjustment mode (bits 1 and 4 ON)
1 2 3 4 5 6
Place the AF Test Sheet (FY9-9081) on the document tray; A4 paper (64 g/m2) may be substitued.
Press the mixed document size mode switch; the test sheet will be fed and stopped on the copyboard glass.
Open the RDF carefully.
Is the position with'n the standard.
END
Close the RDF with the test sheet on the copyboard glass.
Make adjustments using SW1 an SW2 on the RDF controller PCB; see the example (A-9) .
Press the mixed document size switch; the test sheet will be returned to the document tray.

Each press on SW1 moves the document stop position 0.33 mm in the direction oh A

Each press on SW2 moves the document stop position 0.33 mm in the direction oh B



Standard for Leading Edge Stop Position

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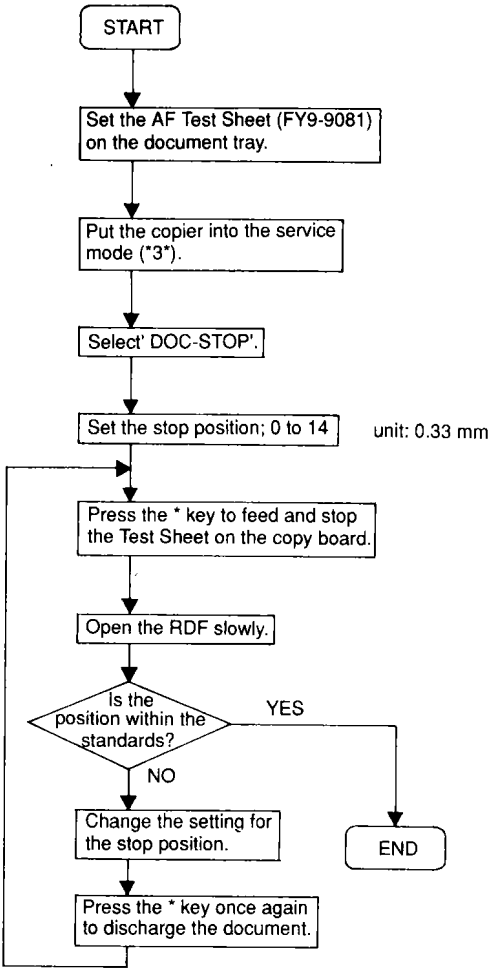
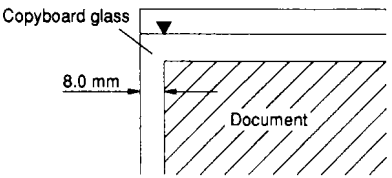
In this case, Use the copier's service mode.

Adjusting the Document Stop Position


START
Set the AF Test Sheet (FY9-9081) on the document tray.
Put the copier into the service mode ("3").
Select' DOC-STOP'.
Set the stop position; 0 to 14
unit: 0.33 mm
Press the * key to feed and stop the Test Sheet on the copy board.
Open the RDF slowly.
Is the position within the standards?
YES
NO
Change the setting for the stop position.
END
Press the * key once again to discharge the document.

*Press the darker or lighter key to change the document stop position ; a signale notch represents a distance of 0.33mm



Standard for Leeding Edge Stop Position.

Operation panel	Direction
Darker	Trailing edge
Lighter	Leading edge

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IV. SIGNALS AND ABBREVIATIONS

A. List of signals and abbreviations

Note:

What is given below are abbreviations and descriptions of the signals used in this manual and circuit diagrams. The abbreviations in parentheses are analog signals, which cannot be expressed as '1' or '0'; those others are digital signals, which can be expressed as '1' or '0'.

BKD	BRAKE DRIVE command
BMCLK	BELT MOTOR clock pulse signal
BMRD	BELT MOTOR ROTATION command
BMON	BELT MOTOR DRIVE command
BMPWM	BELT MOTOR P.W.M. command
DEP1	DOCUMENT EMPTY signal
DFSLD	DEFLECTOR SOLENOID DRIVE command
DSD	DOCUMENT SENSOR DRIVE command
DSIN	EDITOR INPUT signal
DSOUT	EDITOR OUTPUT signal
DMSD	DOCUMENT MIX SENSOR DRIVE command
PMS	DOCUMENT MIX signal
FMCLK	FEED MOTOR CLOCK PULSE signal
FMD	FEED MOTOR DRIVE command
LDD	LAST DOCUMENT DETECTION signal
PDP1	PAPER DETECTION signal 1
PDP2	PAPER DETECTION signal 2
PDP3	PAPER DETECTION signal 3
PDP4	PAPER DETECTION signal 4
PDP5	PAPER DETECTION signal 5
PUMD	PICK-UP MOTOR DRIVE command
PUSP	PICK-UP ROLLER START POSITION signal
RFC	RDF CLOSED signal
RMD	RECYCLE MOTOR DRIVE command
RSIN	RDF SERIAL INPUT signal
RSOUTRF	RDF SERIAL OUTPUT signal
STPSLD	STOPPER SOLENOID DRIVE command
UPCC2	UPPER COVER CLOSED signal 1
UPCC1	UPPER COVER CLOSED 2
WSLD	WEIGHT SOLENOID DRIVE command

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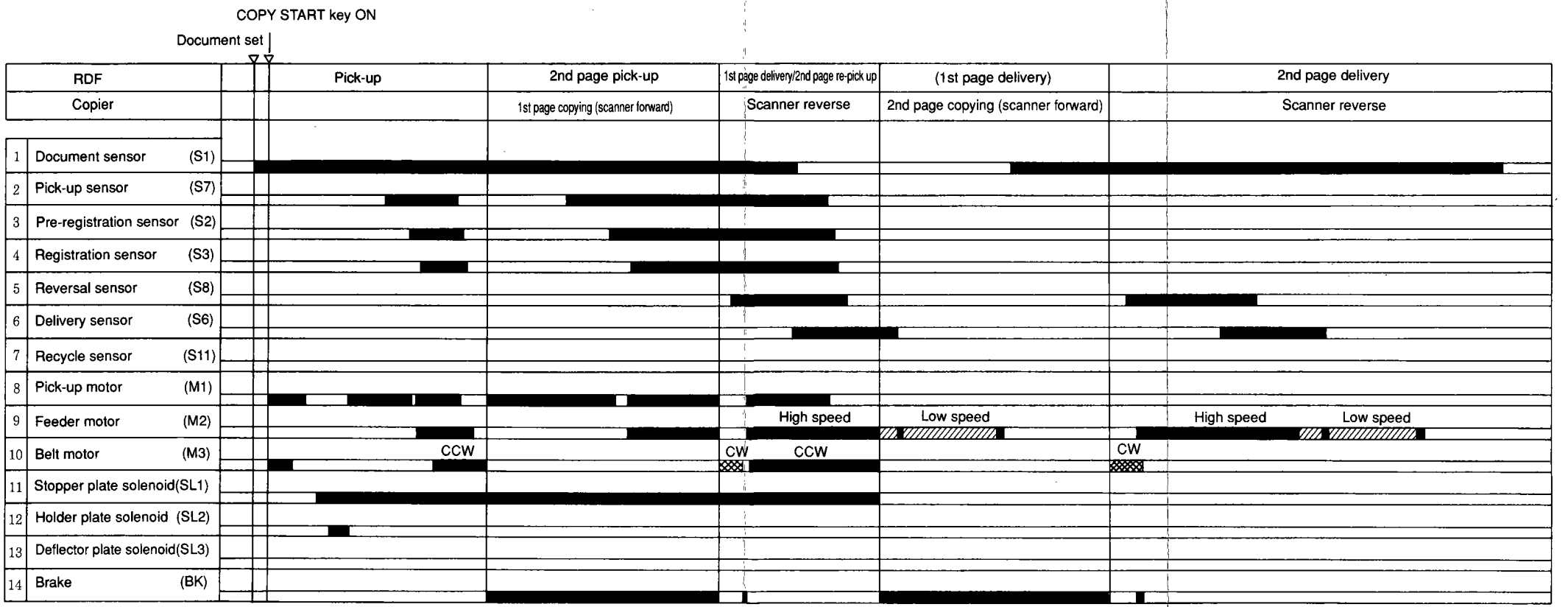
A4, 2 documents (one-sided document to one-sided copy)



CCW: counterclockwise rotation; pick-up direction.

CW: clockwise rotation;delivery direction.

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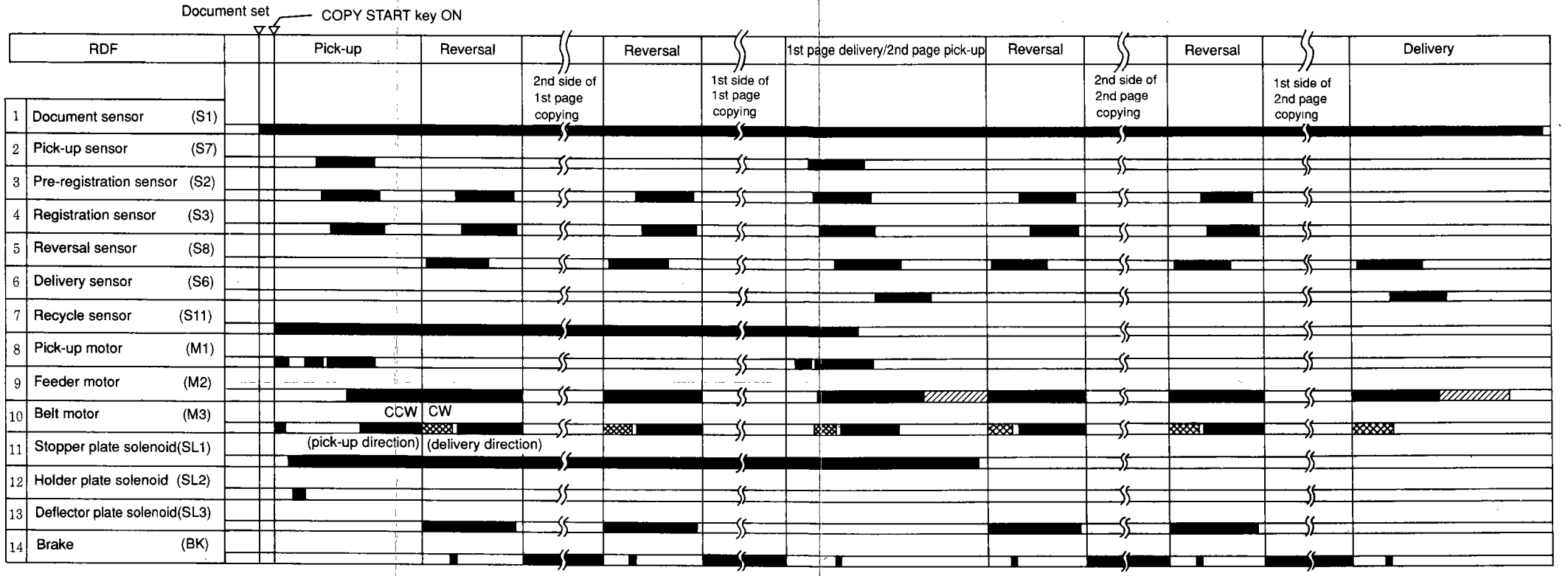
A4, 2 documents (two-sided documents to one-sided copies)



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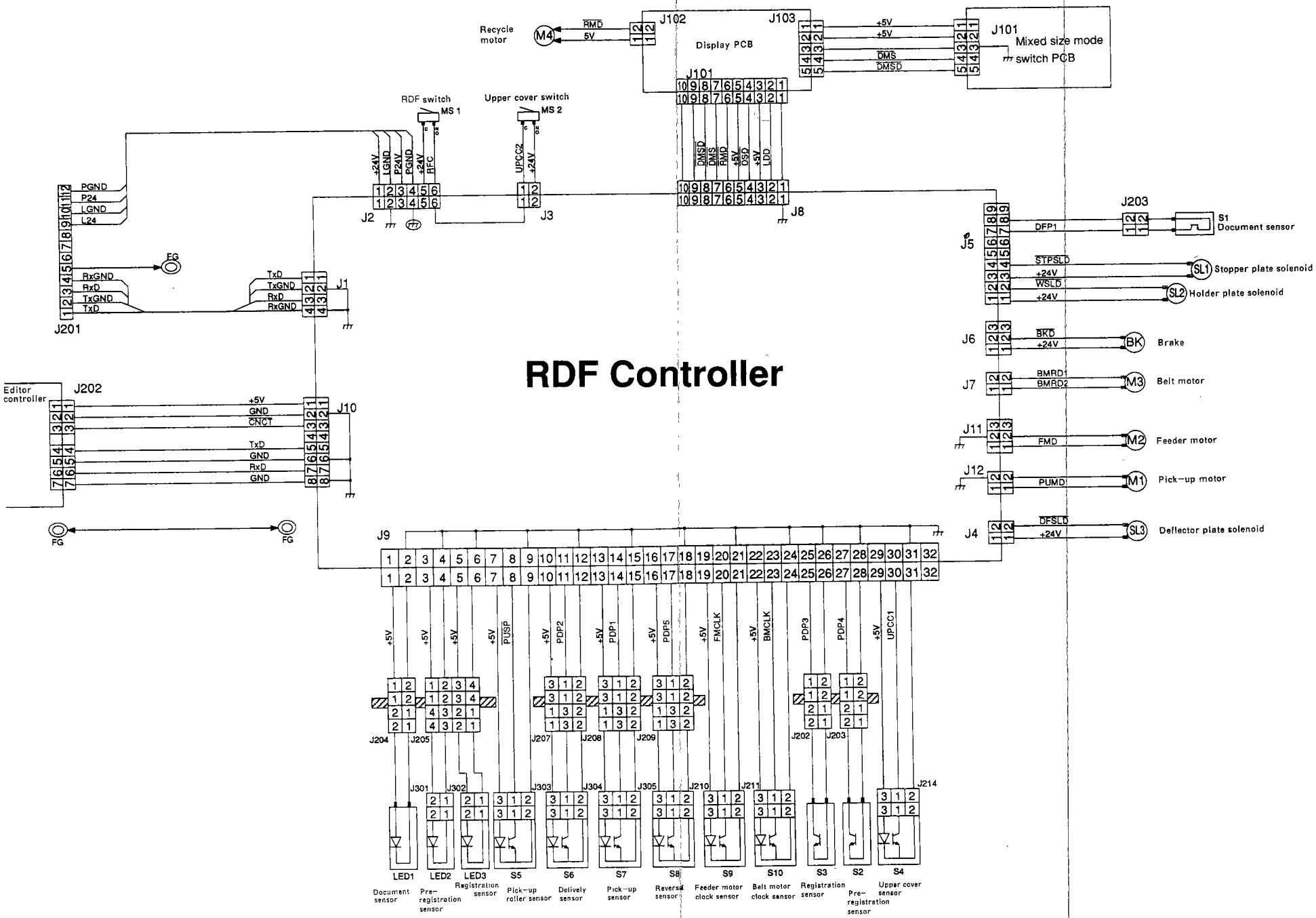

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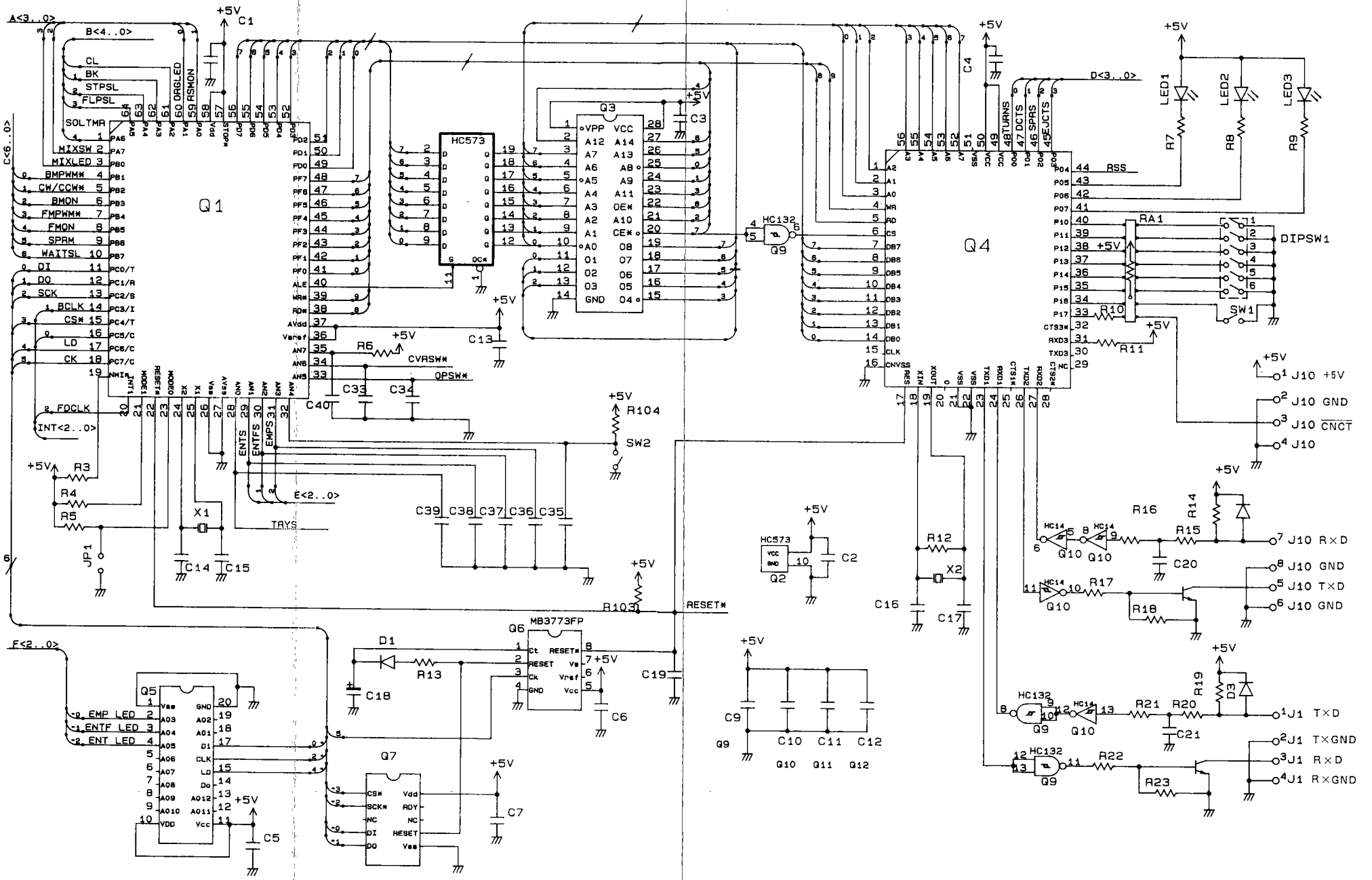
VII. RDF CONTROLLER CIRCUIT DIAGRAM

RDF controller cuircuit



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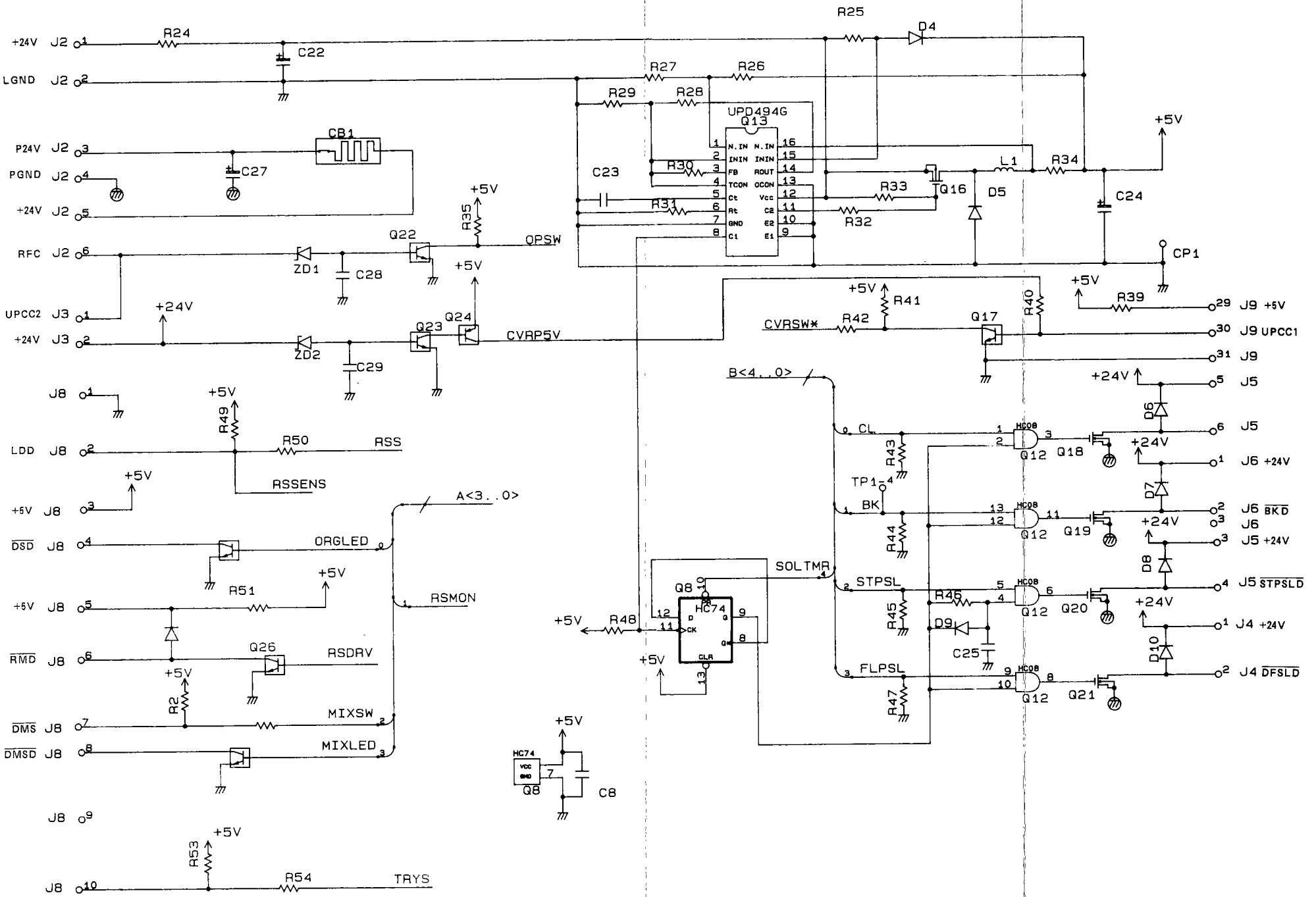

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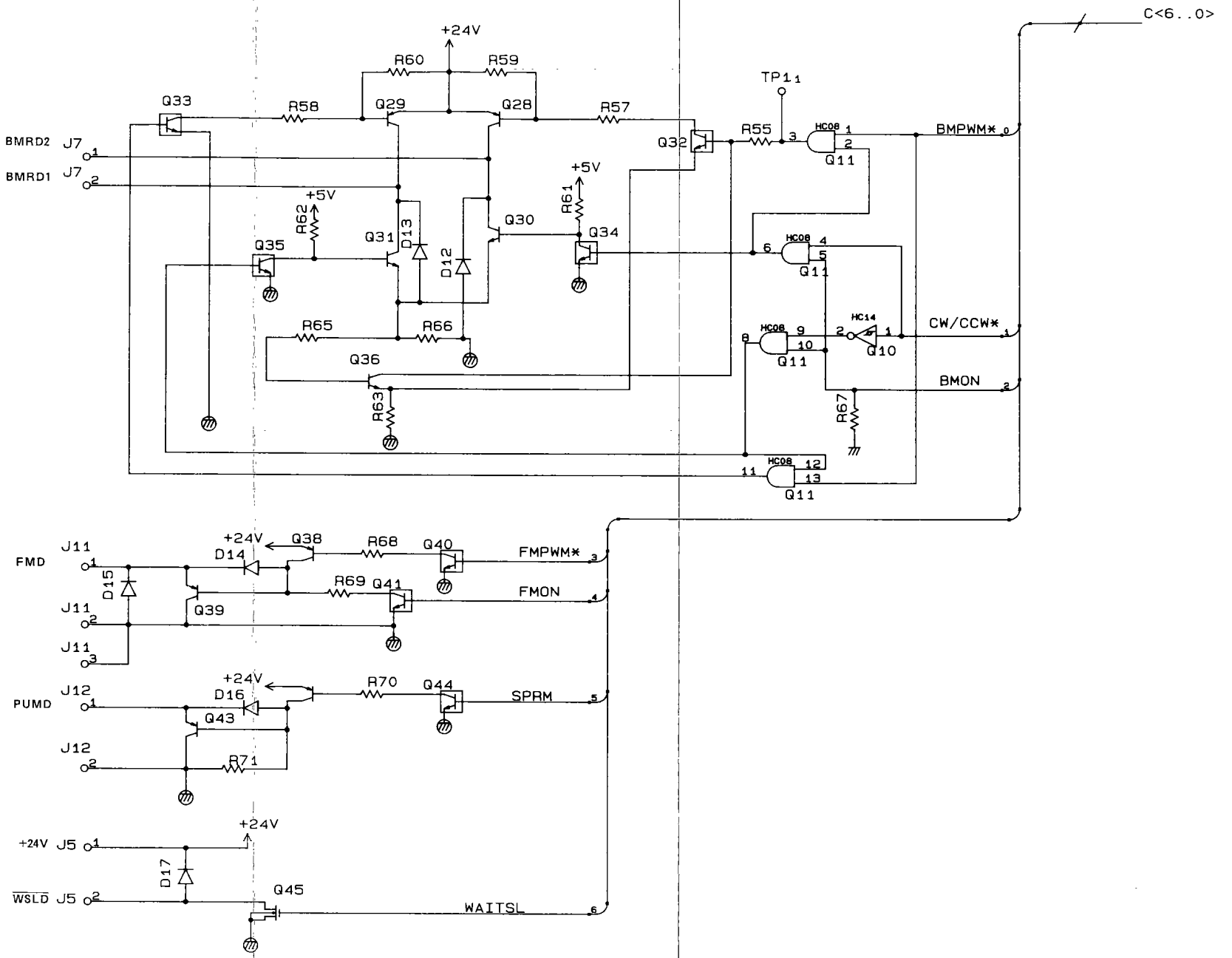
RDF controller circuit (3/4)



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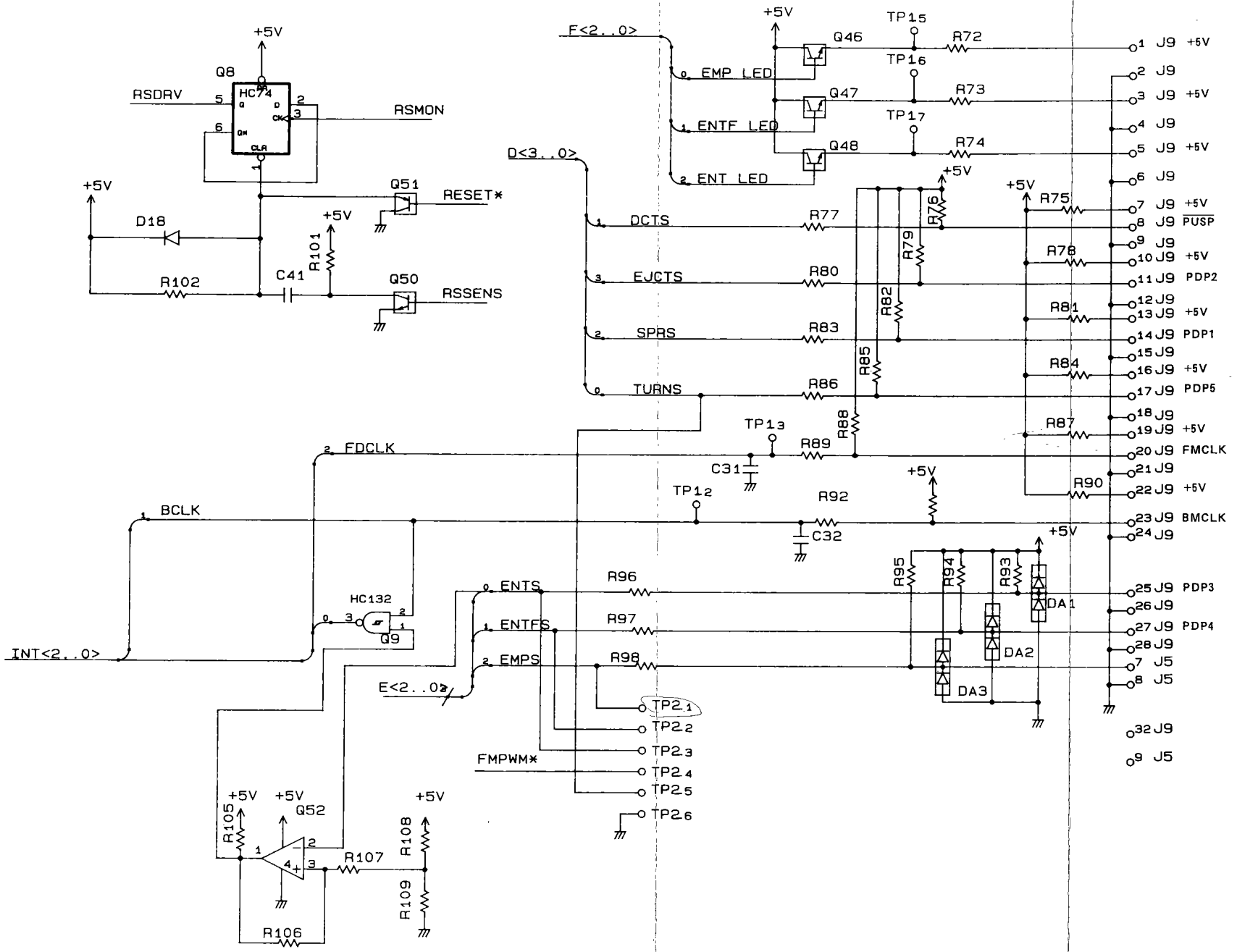

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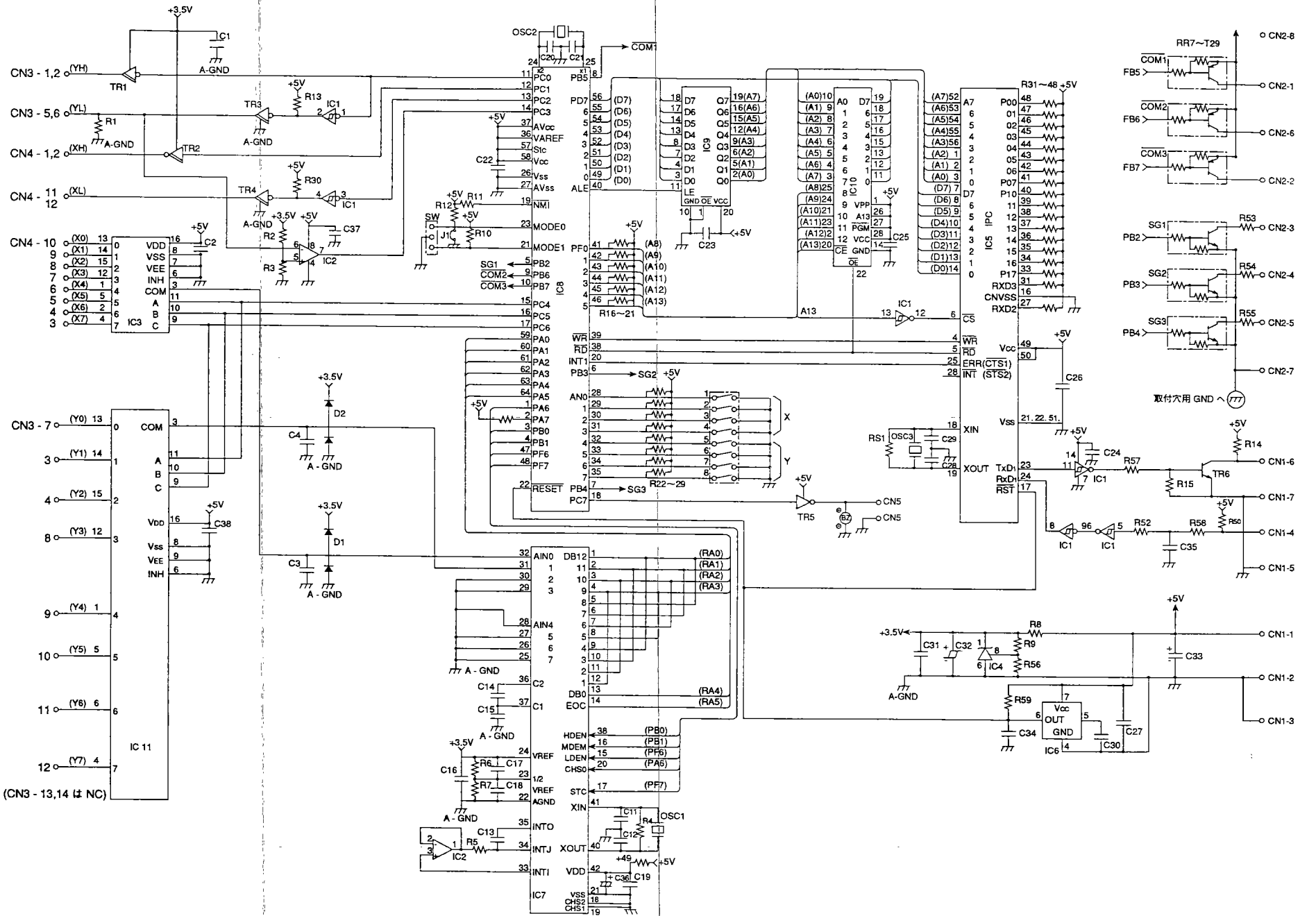
VIII. EDITOR CONTROLLER CIRCUIT DIADRAM



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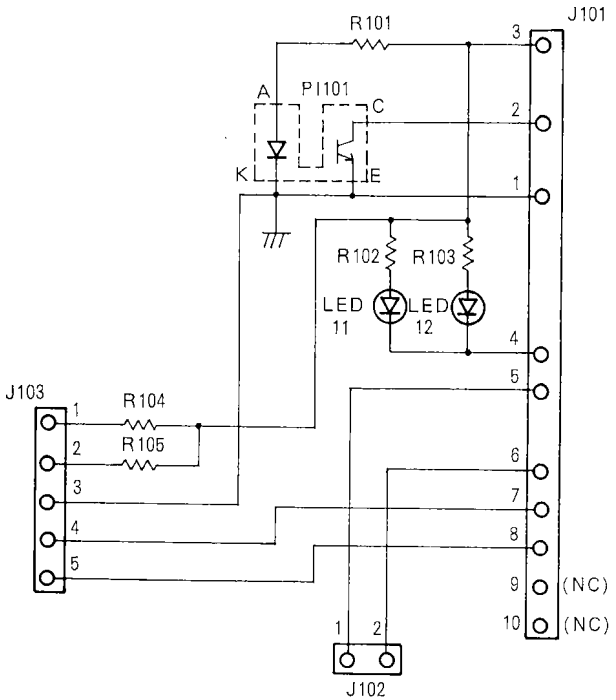
IX. MIXED SIZE MODE SWITCH CIRCUIT DIAGRAM



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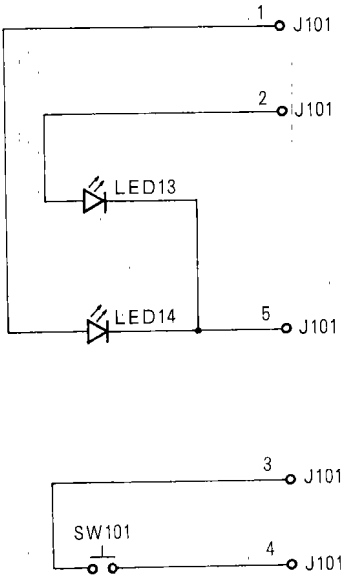
X. DISPLAY CIRCUIT DIAGRAM



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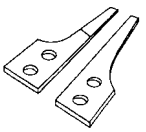
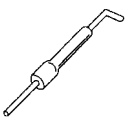
XI. SPECIAL TOOLS

In addition to the standard tools set, the following will be needed when servicing the machine:

No.	Tool name	Tool No.	Shape	Notation *	Remarks
1	Replacement blade for stop ring plier	CK-0246		B	for removing stop ring; 4 to 9 mm
2	Tension gauge	CK-0058		B	for adjusting timing belt; 0 to 600 g

*Keep each tool on hand as follows:
A: each service engineer must have one.
B: each group of service engineers must have one.
C: each workshop must have one.

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XII.SOLVENTS AND OILS

No.	Name	Use	Composition	Description
1	Alcohol	Cleaning; e.g., glass, plastic, rubber, and external covers	hydrocarbon (fluorine family) alcohol surface active agent water	• Do not bring near open fire. • Procure localy. (isopropyl alcohol)
2	Heat-resisting grease	Lubricating; e.g., sliding parts.	lithium soap (oil family) molybdenum bisulfide	• tool No. CK-0427 (500 g/unit)
3	Lubricant	Lubricating	mineral oil (paraffin family)	• tool No. CK-0451
4	Cleaning tissue	Cleaning; e.g., feeder belt, copyboard cover, copyboard glass		• tool No. TKN-0454

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